AIR CONDITIONING & REFRIGERATION NEWS

The Newspaper of the Industry

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Inside Dope

By GEORGE F. TAUBENECK

Learn to live and laugh — thus delay your epitaph

Story of the Week
Verse of the Week
International Soft Shoulders
Like the Mormon Lads
Realistic Choices
Down to Cases

Story of the Week

According to yarning Texans, George Washington and his family actually were living in the Lone Star State when Georgie cut down the cherry tree.

"Father, I cannot tell a lie, I cut the tree," George said, of course.

"Son, did you say you cannot tell a lie?"

"Yes, father," answered George.

"That settles it," shouted Mr. Washington, Sr. "We'll have to move to Virginia!"

Verse of the Week

The typographical error is a slippery thing and sly:
You can hunt it till you're dizzy, but it somehow still gets by.
Till the forms are off the presses, it is strange how still it keeps;
It shrinks down into a corner, and it never stirs or peeps.
That typographical error is too small for human eyes,
Till the ink is on the paper, when it grows to mountain size.
The boss, he stares with horror, then he grabs his hair and moans—
The copyreader drops his head upon his hands and groans.
The remainder of this issue may be clean as clean can be,
But that typographical error is the only thing you see!

—W. C. WINSLOW

International Soft Shoulders

Sudden tough thoughts:

Missionaries for American ideas and methods won't get far if they take a holier-than-thou attitude.

After all, we are juvenilely precocious members of the Ancient Society of Civilized Nations.

Our precocity, like our abundance, is resented abroad. And our brashness is reprehensible to a majority of Europeans and Asiatics.

Press agents for America better can snare appreciative audiences by adopting a more cultivated attitude.

(Concluded on Page 12, Col. 1)

CRMA Members See '55 Sales Setting Record

CHICAGO—Members of the Commercial Refrigerator Manufacturers Association, attending the organization's 22nd annual meeting here, were unanimous in predicting that 1955 sales should break all previous records.

They were told by their executive secretary, Paul H. Sullivan, that combined industry figures for the year's first half showed not only a 23.98% increase over the same period last year but topped the first six months of 1950, the industry's peak year, by more than 22%. The figures represent shipments to customers, it was explained, so that the volume of actual orders on the books would be somewhat greater.

A round-table discussion of the demand trend revealed that while current delivery is still being offered on some models, the demand for most types of equipment has created a substantial backlog, in individual cases ranging to as much as 12 weeks.

It was emphasized, however, that there is a fly, and a sizeable one, in the ointment. A panel of executives appointed to study the problem pointed out that labor and material cost increases within the past year, plus further boosts in the last few weeks as the result of the Big Steel negotiations, have brought on a condition of profitless prosperity that has the typical manufacturer wondering if his dealers and their customers aren't getting all the breaks.

The panel members also reminded the group that while price indexes on many capital goods products had risen as high as 150% over their 1941 levels, the index for commercial refrigerators averages barely 60%, notwithstanding the fact that users are getting a markedly superior product. The panel was

(Concluded on Page 2, Col. 3)

Conditioners Kept as Universal Consolidates

LIMA, Ohio—Universal Major Elec Appliances, Inc. has sold its plant here and will consolidate its operations in Baltimore by Oct. 1, William B. Clayton Jr., president, announced recently.

Production here was stopped by Aug. 13. Production machinery is now being moved to Baltimore, where the company also has a steel porcelain plant and its executive offices.

Clayton declared that after the move, Universal will discontinue the manufacture of refrigerators and freezers. But the company will continue to produce beverage coolers and

(Concluded on Page 29, Col. 1)

Copper Supply for Vital Components Scarce, Price Up

DETROIT—The shortage in the supply of copper is now near the critical stage, and has been reflected in increased prices for copper products, and in the possibility that it may soon affect the availability of copper and brass parts used in refrigeration and air conditioning systems.

Some brass and wire mills have had to cut production drastically. Some field warehouses for copper fabricating firms are so "out" of stock that they have closed down. Copper tubing is still available, but some suppliers are said to be about to put "allocation" or "quota" systems into effect. The U. S. government is releasing some copper from its stockpile, but only for top-rated defense work.

Prices on copper products are going up. There has been an increase of around an average of 7% on copper tubing and refrigeration coils using copper, to the wholesale refrigeration trade, field sources reveal. It is believed that the price of copper itself may go to 40 cents a pound, the highest figure since 1872.

Brunner Workers Skip Vacations To Meet Demand

UTICA, N. Y.—"Brunner-Metic" semihermetic units will continue to roll from the new production lines of the Gainesville plant of the Brunner Co. without a vacation shutdown, according to A. G. Zumbrun, president.

Zumbrun said that workers have agreed to forego regular vacations this year in behalf of the company's effort to keep up with demand. He said that July was the 15th straight month of

(Concluded on Page 4, Col. 3)

Mitchell Now Has 6 Year-Round Models, 6 Add-On Units

CHICAGO—Six models of residential add-on air conditioners and six models of year-round residential systems now comprise the line of residential air conditioners which Mitchell Mfg. Co. here is offering.

The add-on units are available in 2, 3, and 5-ton capacities in both air and water-cooled models. The complete units are made in 1½, 2, and 3-ton capacities, both air and water cooled, in combination with 70,000, 125,000, and 150,000 B.t.u. gas-fired furnaces.

The add-on units are built in two separate sections, B. A.

(Concluded on Page 4, Col. 5)

Heat, Prosperity Boom All Refrigeration, Cooling Sales

Auto Unit Sales Spread North, Sellouts Reported

CHICAGO—Combination of a nationwide month-long heat wave plus the general air of prosperous times has boomed all phases of the refrigeration and air conditioning business, data picked up in the past two weeks here indicates.

How the heat wave brought an almost frantic demand for air conditioning products in many parts of the country has been reported in previous issues. It now seems certain that sales records in all categories of air conditioning equipment will be broken this year. Beyond that, it is the belief of many in the industry that the hot spell "broke" the resistance of commercial and industrial "holdouts" on air conditioning, and also started off the real boom in sale of equipment to existing residences.

Commercial refrigerator products seem headed for possibly the greatest year in the industry's history (see story in adjoining columns).

Household refrigerator and food freezer sales were getting in on the boom. Several of the large producers such as Frigidaire, Kelvinator, and Westinghouse were reporting sales running at the highest level in a long time. International Harvester Co. reported that July was the biggest month for sales of its "refrigeration products" (refrigerators, freezers, and air conditioners) in the nine years it has been in this field. Hotpoint reported it was having difficulty in keeping up with the demand from its distributors for refrigerators and freezers.

Automobile air conditioning is maintaining a rapid rate of growth. A general estimate accepted now is that sales of automobile air conditioners in 1955 will be at least two-and-one-half times that of 1954. And sales are spreading out, no longer being concentrated in the South and Southwest. Cadillac and Chrysler dealers in the Chicago area were said to be sold out on all the air conditioned cars they could get this year. It was also reported that Nash was putting cooling units in 11% of the cars sold in this area.

U.S. OKs Seeger-Whirlpool-RCA Merger

WASHINGTON, D. C.—The U. S. Dept. of Justice has indicated that it will approve the proposed merger of Whirlpool Corp., Seeger Refrigerator Co., and the stove and air conditioner division of Radio Corp. of America.

Stanley N. Barnes, head of the Justice Dept.'s anti-trust division, said that study of the planned merger proved that the transaction would have no major impact on competitors in the markets involved.

Participation by both Sears Roebuck & Co., which owns stock in both Whirlpool and Seeger, and RCA in the $130 million deal offered no prospect that it "might develop into something like the du Pont and General Motors combine in the

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Servicing Auto Air Conditioners 30

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THE LIQUID DRIER

CRMA Members See Record '55--

(Continued from Page 1)

composed of John S. Twist, vice president, Sherer-Gillett Co.; John Romadka, president, Federal Refrigerator Mfg. Co.; Robert L. Tyler, president, Tyler Refrigeration Corp.; and Karl Weber, president, Weber Showcase & Fixture Co.

A second panel that had been named to look into the distribution phase of the industry concluded that the great majority of commercial refrigerator dealers not only are doing a splendid sales job but are applying sound business methods in their operations to a much greater extent than ever before.

Attracting Salesmen

However, there are two disturbing problems facing the industry's dealers today, the panel declared. One is the increasing difficulty of attracting salesmen, the blame for which was placed on the industry's failure to get the story across that commercial refrigerator selling offers greater opportunities for income and security than many fields sales-minded young men are entering today in their search for a career.

Manufacturers are doing all they can to help their dealers find and train new men, but, according to one panel member, the average dealer is devoting very little time and effort to the task of attracting new blood, preferring to bid for the services of experienced older salesmen at the expense of their competitors.

Time Sales Financing

The second problem, it was brought out, is time sales financing. In the past several years, an abundance of credit has been available through local banks. Because few of them have been sufficiently familiar with the risks involved in equipment sales, there has been a lowering of the traditional down payment requirements, and the extension of terms considerably in excess of industry standards. However, such credit sources are now tightening up, which is forcing many dealers to ask the manufacturers for assistance.

Most manufacturers offer national financing arrangements for the benefit of their dealers, but insist on a schedule of down payments and maximum maturities which many years of experience has demonstrated works out most equitably for both seller and the buyer.

Members of the distribution panel were Reese L. Harrison, president, Friedrich Refrigerators; Roger D. Jacobs, executive vice president, The Warren Co.; A. J. Johnson, president, Puffer-Hubbard Refrigerator Co.; and William J. Stelpflug, vice president, Hussmann Refrigerator Co.

Inventory Turnover Discussed

Results of the association's annual survey of inventory turnover rates were presented and discussed by a third panel, composed of John R. Caulk, Jr., vice president, Hussmann Refrigerator Co.; Joseph W. Krall, president, McCray Refrigerator Co.; Edward N. Northey, president, Herrick Refrigerator Co.; and H. D. Thompson, vice president and general manager, Piggly Wiggly Corp., Jackson, Tenn.

This activity was initiated in 1946 in an effort to encourage the manufacturers to take advantage of the important relationship that the speed with which their inventory investment comes back to them in the form of finished goods sales bears to their yearly percentage of profit.

Industry Rate Rises

The 1955 survey showed that the present composite or all-industry rate is 4.58 times, as compared with 3.53 times in 1954, and is the best rate thus far achieved by the group as a whole. The most favorable rate reported was 7.99 times, on the part of a leading manufacturer whose earnings record has been consistently high. The industry's ideal or target figure is 7 to 8 times per year.

It was announced by Millard Mayer, Koch Refrigerators' board chairman that the dates for the 1956 Plant-Tour of their new Kansas City, Kan., plant would be April 12 and 13.

An invitation to hold the group's 1957 Plant-Tour meeting in Los Angeles, to give members' key production and engineering staffs an opportunity to inspect the Weber Showcase & Fixture Co. plant, was extended by Karl Weber, and was unanimously accepted. Each year, a member of the association opens the doors of his plant to the entire group for a first-hand examination of their operations.

Stelpflug Named President

At the close of the meeting, a nominating committee composed of Messrs. Mayer, Northey, Johnson, and Twist sub-

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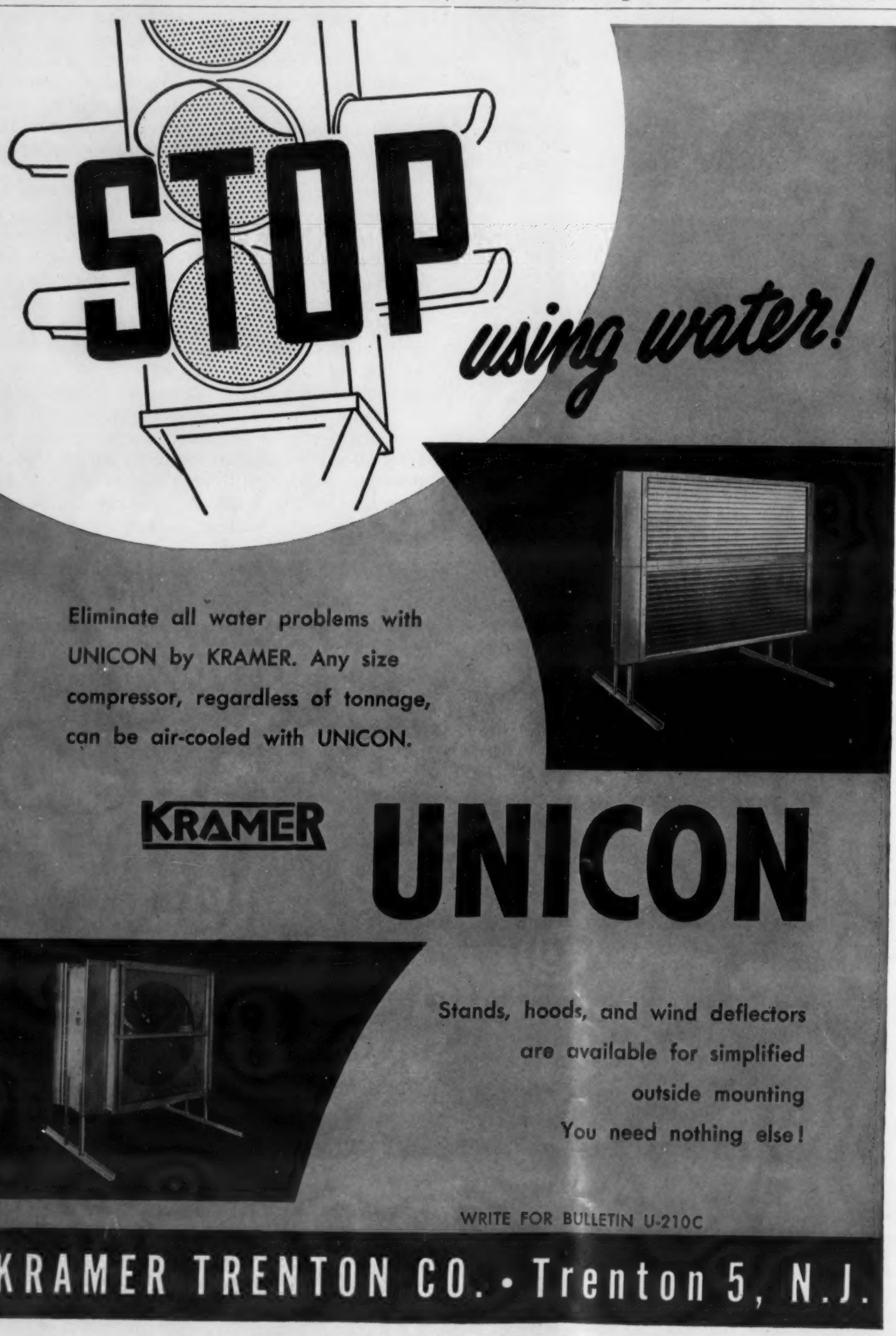
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Remington To Emphasize Technical Abilities When Selecting Outlets

AUBURN, N. Y.—Remington Corp. will in the future place more emphasis on the selection of sales outlets that have the technical ability to market and service all of its air conditioning products, Herbert L. Laube, president, announced recently.

"The newer products in the Remington line have now reached sufficient importance that it is believed to be timely to consolidate their marketing with the sale of the room air conditioner line," Laube declared.

These newer products are Remington's "incremental system" for large multi-room buildings and its "Third Way" system for air conditioning multiple rooms in the home. A fourth group of products consists of special air conditioners and dehumidifiers for industrial and military uses.

"Rumors have come back to us from the field," said Laube, "to the effect that Remington expects to suspend the sale of its room air conditioners within the United States under the Remington brand name.

"Such rumors have absolutely no foundation in fact.

"Contrary to the rumor, it is expected that the changes being made in Remington's domestic marketing program will strengthen rather than weaken this phase of its business.

"The first step in getting this new marketing program into effect has been to make changes in its factory sales organization.

"These changes at the factory level do not mean that existing distributors who are qualified to market room air conditioners only will be discontinued.

"It does mean that when adding new distributors and dealers, more emphasis will be put on those firms who are not only qualified to do a selling job but who also have the technical personnel required for first class application engineering, who are accustomed to doing business through architects, engineers, and builders as well as with the public, and who have available the technical facilities to render first class service on the products they sell.

"Concurrently with this change in marketing plans," Laube continued, "Remington expects to put into effect important changes in the marketing, domestically, of its room air conditioners.

"This will be in the direction of reducing the importance of impulse buying and in having more to offer to the thoughtful buyer who plans his purchases ahead and is prepared to satisfy his air conditioning requirements before the advent of a prolonged hot spell.

"A part of this program for 1956 is a three-fold protection plan for dealers which will make it unnecessary for them to dump merchandise without regard to profit during the middle of the hottest weather simply to make sure that they won't 'get caught.' The details of this three-fold protection plan will be announced in the future.

"As for exports," continued Laube, "Remington has traditionally placed more emphasis on this part of its business than has the industry at large.

"Emphasis on export will continue. The best evidence of the effectiveness of this policy is that for 1955 its export business will not only be by far the largest in its history but will exceed 1954—the previous record year—by about 39%."

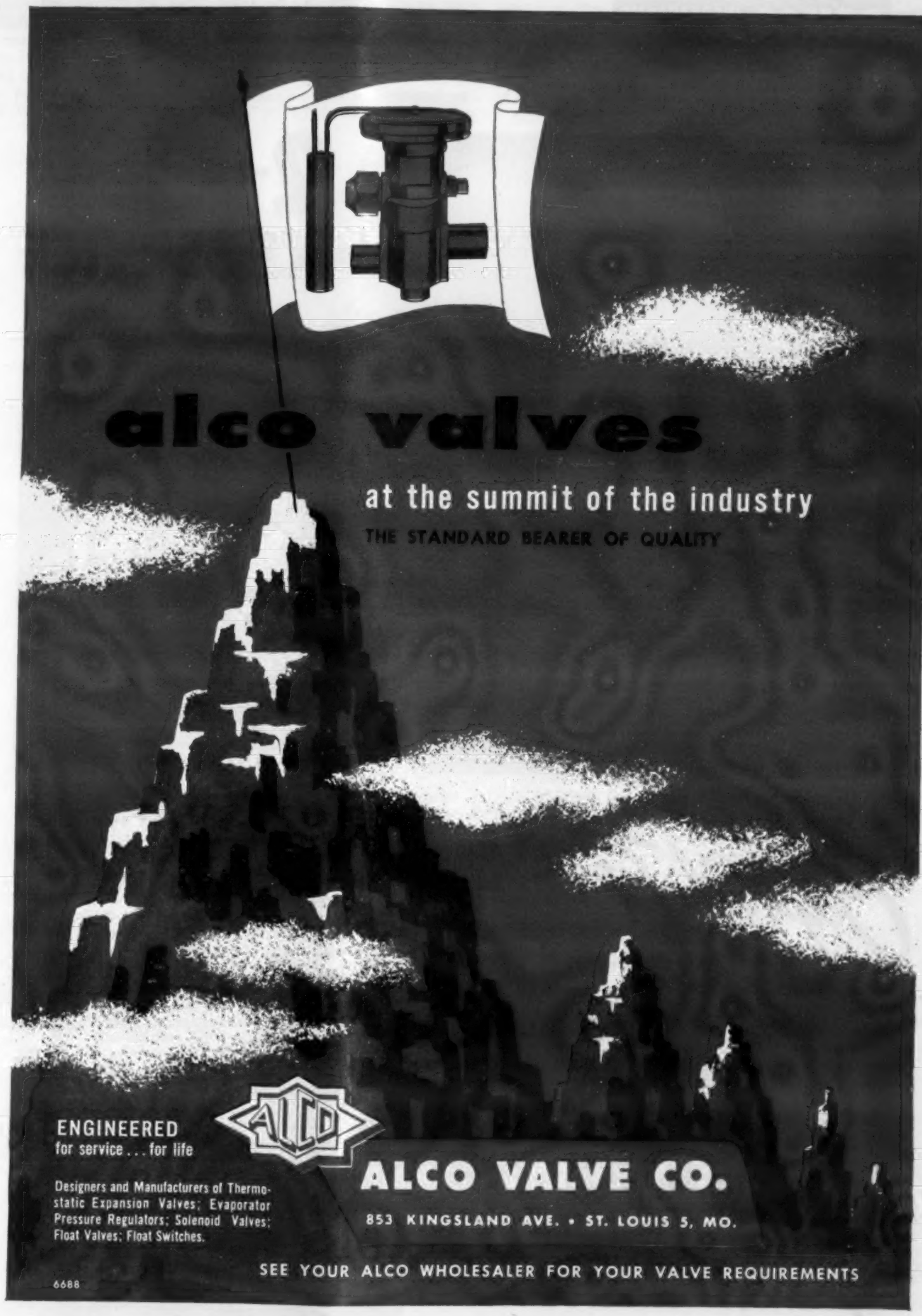
CRMA Meeting--

(Concluded from preceding page)

mitted their recommendations for the 1955-56 CRMA executive committee, which was unanimously adopted. William J. Stelpflug was named president, with Joseph W. Krall as vice president, and Roger D. Jacobs, Chester K. Litman, president of Koch, as directors. William T. McCall, president of McCall Refrigerator Co., was re-elected treasurer.

The retiring president, Edwin B. Ahrens, vice president, The C. Schmidt Co., Cincinnati, acted as chairman of the meeting. The members accorded a rising vote of thanks to Ahrens in appreciation for the outstanding job he performed during his term of office.

In accepting the gavel of office, Stelpflug said that the day marked the close of his 36th year in the industry, which made the occasion particularly gratifying to him. Throughout that period, the new CRMA president declared, he had never wavered in his faith in the industry's potentialities; he had seen it grow from a small beginning to its present stature, and, he was firmly convinced, it offers even richer rewards in the future for those who make it their career.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Brunner Vacations--

(Concluded from Page 1, Col. 3)

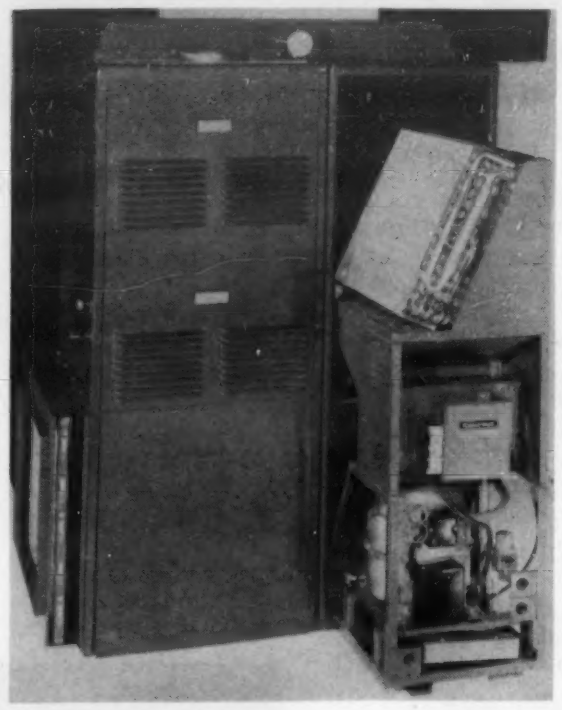
record-making productivity. Production started at the new plant only 18 months ago.

The Utica plant where the parent organization, Brunner Mfg. Co., produces open-type units and a line of air compressors, will shut down for two weeks starting Aug. 20. Zumbrun said extra-hour shifts operating since last winter have permitted production workers to maintain production goals.

A. R. Tiller Dies

RICHMOND, Va. — Archie Russell Tiller, 61, chairman of the board of the A. R. Tiller Corp., died July 8 at his home.

He also served as treasurer of the refrigeration, appliance, and automotive parts firm which he founded.



ALL-NEW line of year-round residential air conditioners has been introduced by Mitchell. Unit pictured is shown with the cabinet opened to display newly developed "Slide-A-Way" cooling chassis. Units are available in 1½, 2, and 3-ton air conditioners, air or water cooled with 70,000, 125,000, and 150,000 B.t.u./hr. gas-fired furnaces.

Mitchell Line--

(Concluded from Page 1, Col. 3)

Mitchell, company president, announced. One contains the hermetically-sealed cooling system mounted on a rigid "Slide-A-Way" chassis. The other is the blower section that can be mounted on the cooling section in a variety of ways. It permits fresh and return air ducts to be placed on any side.

The cooling section, he noted, slides freely out from the cabinet without removing electric controls, damper linkage, baffles, or sheet metal parts.

Where adequate air distribution facilities already exist, the blower section may be eliminated and the cooling section connected directly to the furnace blower.

The hermetically-sealed cooling system on the Slide-A-Way chassis is also found on the year-round units.

Also common to both lines are cooling coils made of a single piece of copper tubing to eliminate soldered return bends and a cap-tube system of refrigerant control which contains no moving parts and allows the unit to start unloaded.

Both are equipped with high and low-pressure cut-outs on the refrigerant system and a thermal overload switch to protect the compressor.

Air-cooled models have factory-charged remote condensers. Water-cooled models are fitted with cleanable condensers.

The condensate drain pan is fitted with an exclusive lint collector and 1¼-in. drain hole. An emergency drain pan and plug are also included. Both drain pans are removable and made of rustproof aluminum.

On the add-on units, Mitchell has mounted the blower on rubber isolators. A canvas connection attaches the unit to ductwork to provide a full-floating assembly. The motor compressor is internally spring mounted. Entire cabinet is double insulated. All units are finished in two-tone Cadillac gray.

An "Electromagic Filter Eye," which constantly measures filter efficiency and switches on a warning light when the filter needs replacing is optional.

The year-round line features automatic controls for both heating and cooling.

The furnace section is equipped with a slotted gas burner to provide quiet shut-off. A safety pilot is standard equipment.

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'Life' Reports on Austin Village

Article Says Test Families Consider Cost Small Compared to Comfort Gained

DETROIT — Complete home cooling got a nice boost in the Aug. 8 issue of *Life* magazine when that publication, in its Modern Living section, reviewed some of the results of the Austin Village experiment in air conditioned homes.

While there is nothing particularly new in the *Life* report, which was published under the title "Dig That Real Cool Contraption," it is interesting because it presents one of the first "outside of the industry" reports on the project.

Physicians and psychologists who observed the effects of air conditioning on the occupants, said *Life*, "found that families with air conditioning sleep better, eat heavier foods, have better dispositions, and stay home more. But there were also some complaints—notably concerning noise."

Suggestions for Getting Most for Money

To "get the most for their money and the lowest operating costs," *Life* said that engineers who studied the project listed, in order of importance, the following suggestions for the efficient operation of a cooling unit:

1. No hot sun should strike window glass. (A picture window that caught the afternoon sun boosted cooling expense on one house by 15%.)

2. A house should be well insulated against both heat and moisture. (The attic floor should have the equivalent of 6 in. of rock wool and the walls 4 in.)

3. Ventilation between the roof and ceiling should be adequate.

4. The size of a cooling unit should be determined by an expert's careful analysis.

5. The house should have a light-colored exterior and roof.

6. Family living habits should be arranged to help the cooling unit.

7. Clothes driers should be vented to the outdoors.

8. The air conditioning system should be installed by an expert.

9. The air in the house should move constantly (the blower should not be run intermittently, and some fresh air should be brought in from outside).

10. Ducts that carry air from a central unit should be insulated wherever they pass through uncooled spaces.

11. The register openings through which air enters should be situated near the outside walls of each room.

12. The air conditioner should be so constructed that no water stays on the cooling coils when the machine stops, or so that the air by-passes the coil completely.

13. The air conditioner should be built with good insulation and a tight seal between it and whatever heating equipment it adjoins.

The article says that the excessive noise resulted partly from faulty installation and partly from faulty design, and suggests that it can be overcome by using platforms to mount the equipment and isolate it from the house framing, and by lining the cabinets with sound-deadening insulation.

Test Families Delighted

In conclusion, *Life* says that "the test families are already on record as in favor of their way of life. Even families with the highest bills are delighted and consider the cost small enough to escape the heat. And families with efficient cooling systems have discovered an extra bonanza: good insulation makes possible a substantial saving in winter fuel bills," the *Life* report stated.

Warfield Appointed By American Blower

DETROIT — Appointment of V. C. Warfield as western division merchandise manager has been announced by E. W. Petersen, sales manager of American Blower Corp.

In his new position, Warfield will be responsible for providing sales and application engineering assistance to jobbers in connection with the company's line of packaged merchandise products and commercial air conditioning equipment.

He will service jobbers in the Chicago, Minneapolis, Milwaukee, Rock Island, South Bend, Fort Wayne, and Indianapolis areas. He will headquarter in Chicago.

Part of his initial assignment will be selection and establishment of distributorships for the company's new line of commercial air conditioning equipment.

Units One Ton and Over

St. Louis Warns Conditioner Owners Of Need for Permits, Inspections

ST. LOUIS—"Unless installation permits are granted and annual inspections are made on air conditioning units with 1-ton capacity or more, owners risk having the unit sealed and made useless," says Public Safety Director Joseph P. Sestric.

Sestric issued the statement as a warning to air conditioning users in St. Louis. Although the requirements for city permits and inspection have been in the local building code since 1945, many users have been unaware of the law.

Permits to install and operate the equipment must be obtained from the Section of Mechanical Equipment at the Department of Public Safety in City Hall.

Installations with electrical connections also require a permit from the electrical section of the Department of Public Utilities.

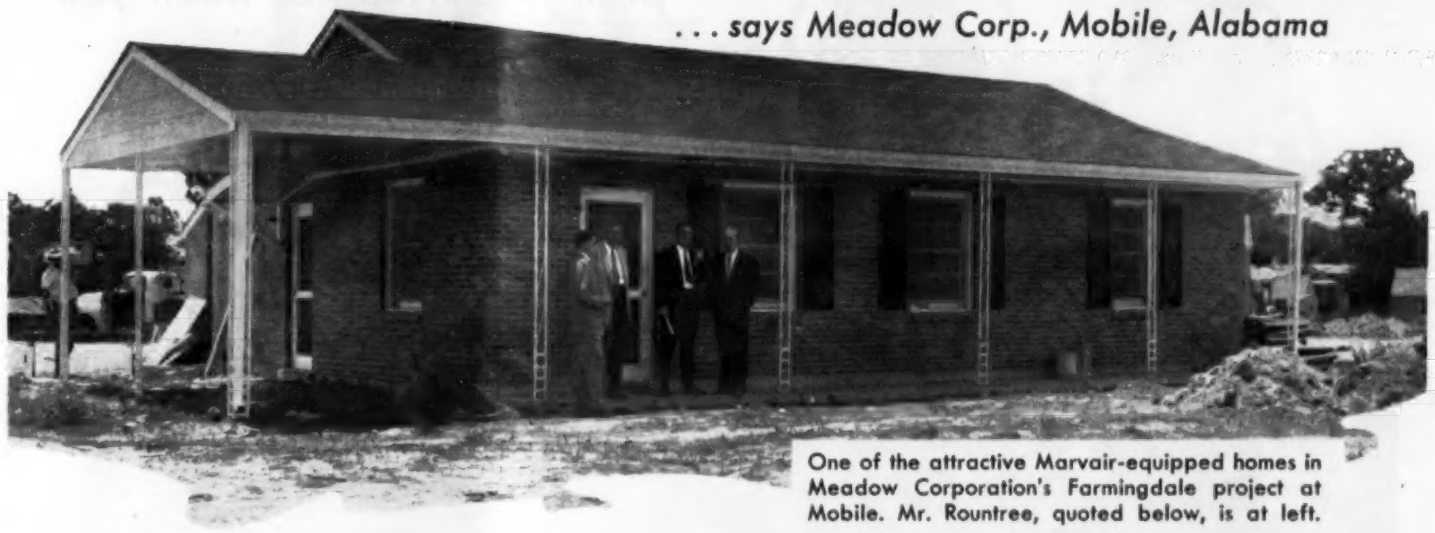
Those installations having water and sewer connections require, in addition, a permit from the plumbing section of the Division of Building and Inspection, it was pointed out.

Then, after all permits are obtained and the installation is safely made, it cannot be operated legally until it has been inspected and approved by Mechanical Equipment Section.

Sestric said air conditioning equipment, ductwork, and electrical safety controls are subject to bi-annual inspections by the mechanical equipment section.

"Our New Homes are 100% MARVAIR"

. . . says Meadow Corp., Mobile, Alabama



One of the attractive Marvair-equipped homes in Meadow Corporation's Farmingdale project at Mobile. Mr. Rountree, quoted below, is at left.

Offer YOUR Customers the Air Conditioners that are

TOPS in PERFORMANCE, LOWEST in PRICE!

"We selected Marvair Air Conditioning for every home in our big new Farmingdale project because it keeps us ahead of the field in *value*, below competition in *price*," writes Harold Rountree, Meadow Corporation, Mobile, Alabama.

"Also, we like Marvair's extreme ease of installation, unusual quietness, fine performance and freedom from servicing worries. Economy of operation is a popular feature with our home buyers. Our two coming projects will be 100% Marvair too!"

Proved *right* by project builders, Marvair Air Conditioning is right for home modernizing as well. Quality-built of finest materials, there's a Marvair to meet every home requirement, every family budget.

In the commercial field, we make water- and air-cooled units for stores, offices, small plants; also horizontal type for any forced-air furnace. Marvair is the only complete line not restricted to franchised dealers. For more volume, more profit, go MARVAIR all the way!

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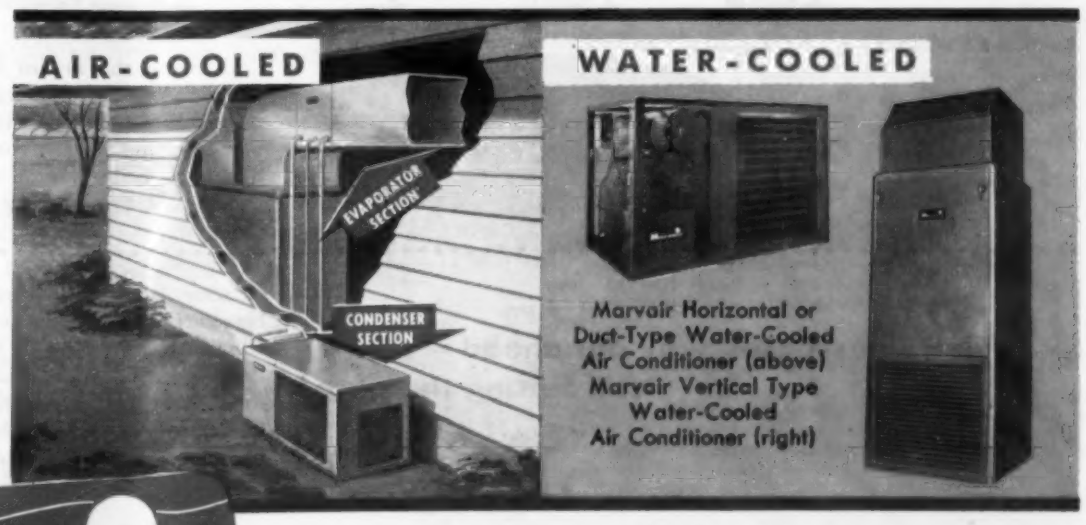
New Remote Waterless ▶ MARVAIR • Condenser goes anywhere—horizontal or vertical flow evaporator can be installed with any type of warm-air furnace.



Marvair Horizontal or Duct-Type Water-Cooled Air Conditioner (above) Marvair Vertical Type Water-Cooled Air Conditioner (right)

Marvair AIR CONDITIONER

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MUNCIE, INDIANA

A Great Name in Heating and Air Conditioning

Irradiated Foods—Army Cites Taste, Color, and Odor Problems

COLUMBUS, Ohio—Use of ionizing radiation as a means of sterilizing foods and pharmaceuticals has proved feasible but many problems remain to be worked out before such a process is generally accepted in industry.

So declared Lt. Col. Belmont S. Evans, Jr., of the Quartermaster Food & Container Institute for the Armed Forces, at the 15th annual meeting of the Institute of Food Technologists.

The large doses required for sterilization require dose rates to be very high, and this can be accomplished only with powerful electron accelerators or gamma sources whose strength is measured in kilocuries, he pointed out.

At present, the only electron sources available have limited penetration potentialities, but in the near future, machines producing electrons of greater energy may be available, according to Col. Evans.

Gamma Sources Limited

He also noted that present gamma sources of required intensity are limited, but may be expanded as the science and technique of separation of fission products and reactor design progresses.

In another paper, Robert G. Tischer, also of the Quartermaster Food & Container Institute for the Armed Forces, reported on the current status of the U. S. Army Quartermaster radiation sterilization program.

He said the government's program to investigate the possible use of ionizing radiation has been placed in the hands of the Quartermaster Corps and is now in its second year of operation. Initial work has been of an exploratory nature and necessary avenues of further research are opening up, it was pointed out.

Investigations have been made concerning dosages required for commercial sterility, nutritional changes, and changes in flavors, colors, and odors, it was pointed out. Some basic work is also being conducted in the use of additives to prevent certain changes or to offset undesirable flavors and odors that develop, according to Tischer.

Another paper covered extension of food storage life by irradiation. Authors were B. E. Proctor, J. T. R. Nickerson, J. J. Licciardello, S. A. Goldblith, and E. E. Lockhart of the Dept. of Food Technology, Massachusetts Institute of Technology.

In their studies, certain meat and vegetable products were treated with high-voltage cathode rays for purposes of extending storage periods at refrigerator temperatures above freezing.

Organoleptic evaluation indicated that certain foods treated in this manner may be held at refrigerator temperatures for periods lasting from several weeks to several months without significant differences in acceptability, the researchers said.

Also presented was a report on the nutritional and biochemical effects of radiation. This subject was discussed by C. G. King, The Nutrition Foundation, Inc., New York City, and R. R. Becker, Dept. of Chemistry, Columbia university. Their findings were summarized as follows:

"For any practical use of radiation sterilization of foods, it is of obvious importance that the products meet rigid standards of nutrition and acceptability.

Specific Nutrients Destroyed

"Although the total amount of chemical change produced by sterilizing doses of ionizing radiation is small, specific nutrients are destroyed to varying degrees, and the possibility of the production of unwholesome compounds exists.

"Long-term feeding studies in which the butterfat portion of the experimental diet has been irradiated are being carried out, with special reference to the possible presence of injuries, or especially, carcinogenic compounds.

"A vitamin E deficiency has been observed in other laboratories, when irradiated meat was the experimental diet. A slight decrease in reproduction, partially remedied by vitamin E supplementation, has been found in our experiments.

"A slight growth decrease has been noted in some experiments in animals fed the experimental diet even when vitamin E has been furnished. However, no evidence of specific abnormalities was observed by an experienced pathologist upon examination of the tissues of the experimental animals.

Effect on Milk

"Related studies concerning the destruction of some of the nutrients in milk showed vitamin A, the tocopherols, and ascorbic acid to be highly sensitive to destruction at sterilization doses; the carotenes and riboflavin were moderately sensitive. Similar results were obtained with other dairy products.

"Oxidative changes induced by radiation in various fats have been observed."

Among other papers on the subject was one regarding concomitant use of radiation with other processing methods. This report was by H. W. Schultz, R. F. Cain, and H. C. Nordan of Oregon State college, and Bruce H. Morgan of the QM Food & Container Institute for the Armed Forces.

The researchers noted that they have investigated the concomitant use of ionizing radiations with conventional processing methods such as cooking, dehydration, freezing, and gas packaging on the development of the "irradiated" flavor in meat products packed in No. 2 cans.

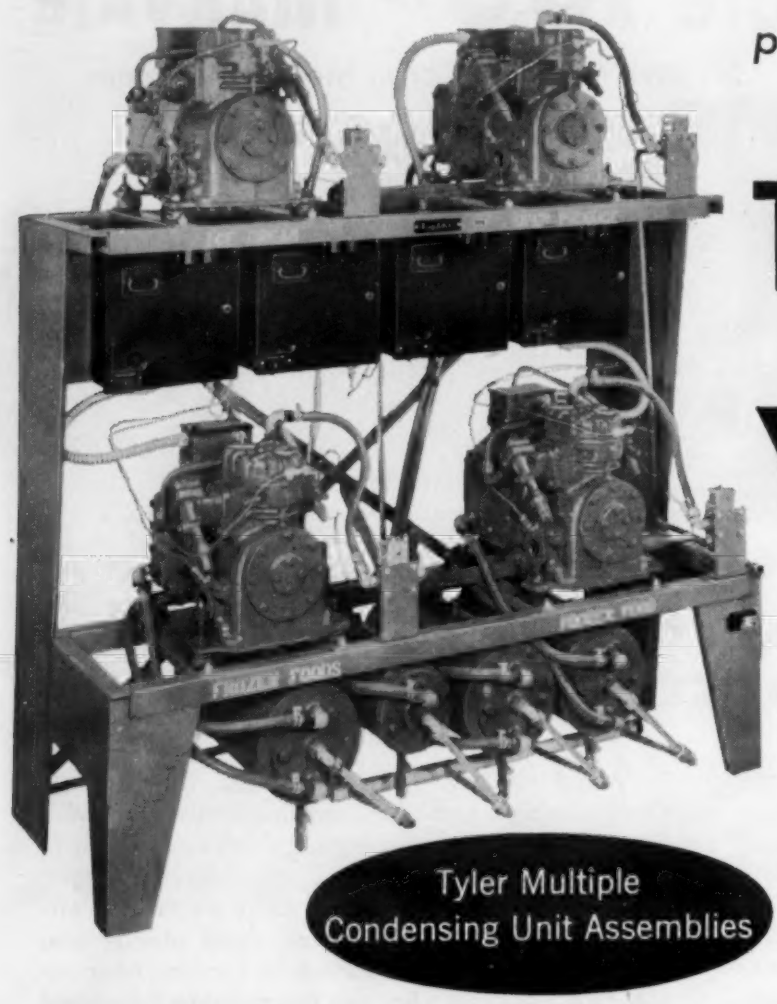
"The irradiated meat products have been evaluated by means of taste test panels where results could be analyzed statistically.

"In all tests with hamburger, frankfurters, and bologna, the flavor score of the non-irradiated samples was significantly higher than any of the irradiated samples.

"There was no significant difference among any of the conventional processing procedures which were coupled with irradiation.

"Evaluation of unseasoned ground pork has shown that trained testers familiar with irradiated flavor could not distinguish between irradiated and non-irradiated samples."

Big, new, unlimited profit opportunities when you—

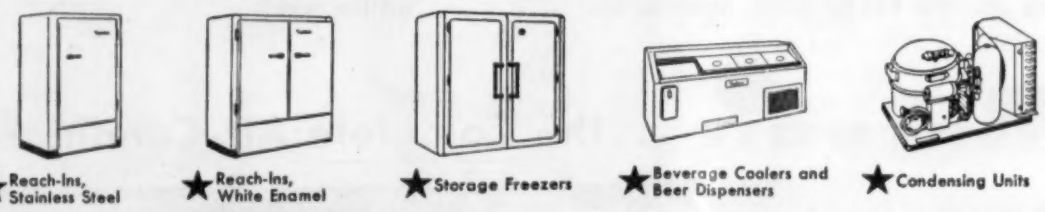


Tyler Multiple Condensing Unit Assemblies

Team up with Tyler!

Aggressive Tyler Agents set impressive new sales records!

Tyler Agents now offer complete *balanced systems.* Tyler Assemblies cut costs . . . save valuable floor space . . . insure better performance . . . offer *controlled installation and operating costs!* Completely engineered—detail installation work done at Tyler factory; delivered as one compact assembly!



★Reach-Ins, Stainless Steel ★Reach-Ins, White Enamel ★Storage Freezers ★Beverage Coolers and Beer Dispensers ★Condensing Units

Tyler 5-Star line

Cash in on the *urgent need for both normal and zero storage* of perishables in food service establishments! Big new Tyler line . . . stainless steel and white enamel Tyler Storage Freezers, Reach-Ins, Beverage Coolers, Sectional Storage Freezers, Beer Dispensers, Condensing Units!

Tyler Sales-Cases 'way out ahead — still setting the pace!

In store after store across the country—Tyler has revolutionized open merchandising! The Sales-Case line is proving to be one of Tyler's greatest "Advanced Design" successes! Operators have found that *Sales-Cases pay off* in increased sales, faster turnover, easier loading, cleaning and maintenance—*better merchandising at lower cost!*

Write for full information!

TYLER

TYLER LEADS—others follow!

The BIG name in food refrigeration

TYLER REFRIGERATION CORPORATION, Niles, Mich.

In Canada—write Tyler Refrigerators, 128 Avenue Road, Toronto, Ont.

For more information about products advertised on this page use Information Center, page 20.

Trailer Demonstration Unit Helps Florida Dealer Sell 26 Heat Pumps In 3 Month Period

PENSACOLA, Fla. — "The best $2,500 I ever spent."

That's what it cost Hugh E. Gilmore, who operates the Hugh Gilmore Refrigeration Service, Inc., here, to set up a trailer demonstration unit of a Typhoon Prop-R-Temp heat pump.

"This is the best salesman that I have on the road," Gilmore says. "It actually sold 26 units the first 90 days in '55."

Gilmore did not originate the idea of setting up a heat pump on a trailer, but he has carried it through to the logical conclusion.

Not only does Gilmore haul the trailer around so prospects can see it work, he's had canvas ducts made so he can connect the unit to a store or house through a window and give an actual demonstration of results to be expected.

Trailer demonstration unit was conceived by Typhoon Air Conditioning to display its residential air conditioner, and then was adopted by Typhoon Prop-R-Temp for the heat pump.

Latter setup includes a heat pump unit mounted on a two-wheel trailer with a cooling tower. Plugged into suitable electrical service, the heat pump will demonstrate both its heating and cooling cycles.

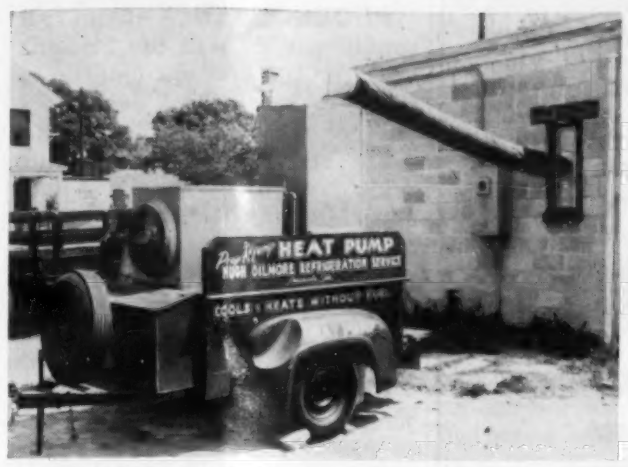
But Gilmore's idea of ducting the heated or cooled air into the prospect's home provided the novel twist that has proved so effective.

Heat pump pictured in the accompanying photos is a 3-hp. job.

"It will actually cool and heat a three-bedroom house, not to exceed 1,500 sq. ft., for the sum of $125 a year total operation cost," Gilmore says. "This is based on a 24-hour per day operation," he adds.

"I conduct demonstrations not only in homes but also through the entire power company's territory, one at each of their offices," Gilmore explains.

"With this equipment on hand in small town areas where the customer can see it in operation, it is practically impossible to miss. In other words, this is a salesman's dream, a piece of equipment that will sell itself."



ABOVE: Canvas duct leading from 3-hp. heat pump on trailer to prospect's store gives sales-clinching demonstration of what unit will do.

RIGHT: Demonstration unit has transparent front panels so prospect can see "works" as well as feel results of heat pump when hot or cool air is piped into home through canvas duct.

Dallas Power Estimates 17,260 Air Conditioners Installed In 6 Months

DALLAS — An estimated 16,400 room air conditioners and 860 central air conditioning units were installed in the city of Dallas during the first six months of this year, the Dallas Power & Light Co. reports.

The company declared that it is planning to increase its generating capacity 74% over what it was at the beginning of this year by 1957. This will bring its capacity to 837,000 watts.

"This increase alone would have served all Dallas' needs as late as 1952 and a large amount of this added capacity is being installed to serve the growing air conditioning load."

The utility estimates that there are now 110,906 window-type air conditioners in the city and 8,418 central systems. There are said to be more than 4,500 residential systems in use.

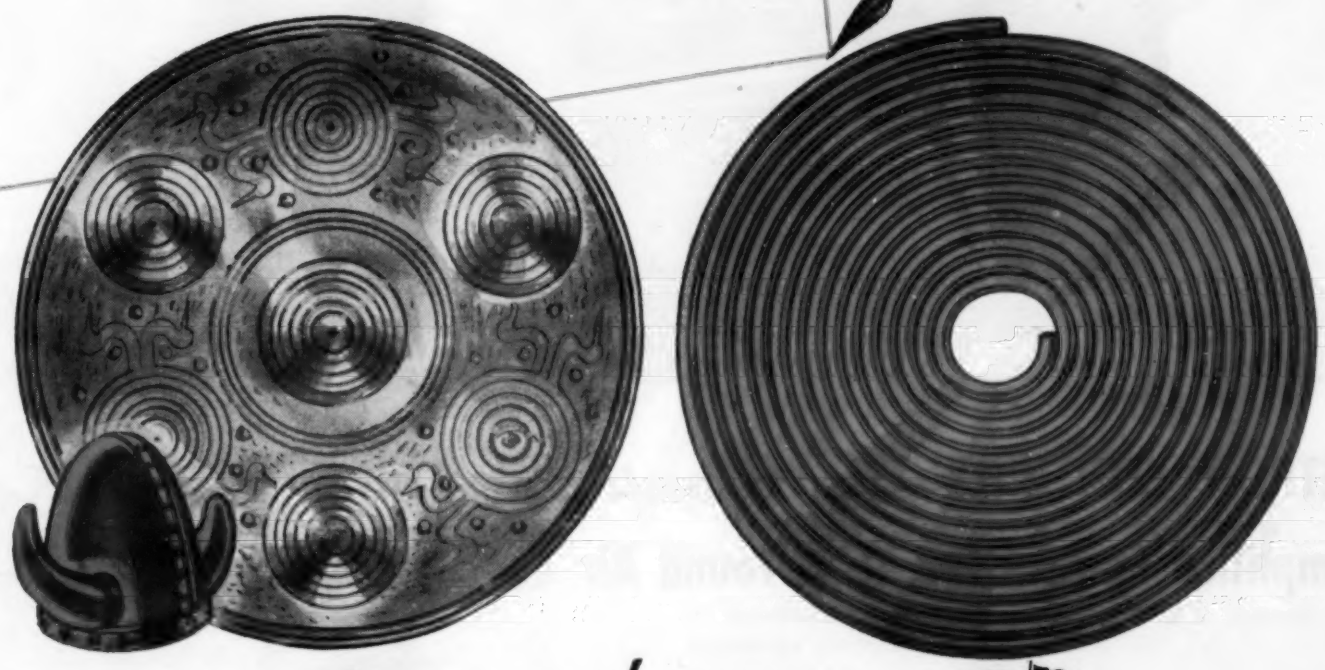
Water use, which has jumped 58% in five years, is also affected by 170,000 evaporative coolers.

The city estimates that it is pushing 30 billion gals. of water through its mains this year as compared with 19 billion in 1950. Per capita daily use was 55 gals. in 1920, 119 gals. in 1950, 141 last year, and an estimated 150 gals. this year.

City officials forecast that by the year 2000, consumption will be 200 gals. per capita for 2.5 million people.

VIKING.....

a sign of strength



then *and* now

easy to fabricate VIKING *copper tube*

The great shield of the Viking has long been a symbol of strength, for it took a strong man to carry it and a strong man to use it skillfully. The Vikings were the tallest and most powerfully built people in Europe in the period around the 8th century. History is rich with the incredible navigational feats of these roving seamen.

Today in industry, the name "Viking" has become a symbol of strength — strength where strength is needed — in the finest copper tubing ever manufactured for the commercial refrigeration and air conditioning industry.

STRENGTH THROUGH TEMPERING

Viking copper tube is annealed with precision uniformity in electric annealing furnaces. The uniform temper insures speedy, efficient, trouble-free fabrication and strength.

EASY TO BEND AND FLARE

Whatever the application, Viking copper tube makes the work go faster because it is easier to fabricate. Viking refrigeration tubing is soft and pliable—can be formed, flared and expanded quickly without danger of fracturing and splitting.

CLEAN AND DRY

Triple-sealed Viking tube avoids trouble before it starts — remains extremely dry and absolutely free of dirt. The seal is made to pass through any opening large enough for the tube itself.

VIKING *copper tube co.*

CLEVELAND 10, OHIO

PRECISION DRAWN SEAMLESS COPPER AND ALUMINUM TUBING

For more information about products advertised on this page use Information Center, page 20.

WANTED: Air Conditioning Regional Representatives

Gibson Refrigerator Co., Greenville, Michigan, has several territorial openings for air conditioning salesmen who have had experience in selling 2 to 15 ton residential and commercial air conditioning. Attractive base salary plus bonus arrangement. This is a real opportunity to any man who wants to increase his earning power. Write Earl Palmer, Manager, Self-contained Air Conditioner Division.

Gibson Refrigerator Co.
515 Williams Street
Greenville, Michigan

Central and Room Conditioner Sales Soar In Phoenix

PHOENIX, Ariz.—Room air conditioner sales in the Phoenix area for the first six months of this year soared 93% over those of the same period last year, while central air conditioning sales jumped 185%, the Appliance Merchandisers Association here reported recently.

Room air conditioner sales rose from 798 units in the first half of last year to 1,542 this year.

Central air conditioners jumped from 323 installations to 929.

For the same periods, automatic laundry sales rose 57%, dryers 36%, conventional washers 21%, and freezers 9%. Refrigerator sales were down 5%.

Big Units Moving Well, Too

TONS and tons of varying sizes of air conditioning equipment ready for delivery. This large array of heavy-duty Chrysler Airtemp central-station cooling units was snapped by the photographer recently as the compressors, condensers, and water chillers—ranging in size from 10 to 125 hp.—were awaiting shipment to hotels, motels, office buildings, and industrial plants throughout the nation. Airtemp reports that 1955 central-station unit sales are running well ahead of last year.

7-Story St. Louis Hotel Will Be Air Conditioned

ST. LOUIS—Architect Bernard McMahon has announced plans for construction of an air conditioned seven-story, 120-room hotel on a two-acre site between Bonhomme Ave. and Carondelet Ave. in Clayton. The structure will cost an estimated $1,500,000.

School Heat Pump Operates for Less Than Heating Alone

JACKSONVILLE, Fla. — A test of a 3-hp. McMillan heat pump has been made in a Duval County school with results which "indicate that a school building can be cooled in summer and heated in winter at approximately three quarters the cost of heating alone by conventional methods," according to W. W. McMillan & Co.

The company, which has specialized in the installation of heat pumps in Florida since 1947, recently began manufacturing home and commercial package units and custom-built jobs. The McMillan heat pump operates on the water-to-air principle.

The importance of the test in the school was emphasized by Mr. McMillan because of the shortage of schools and discussion of holding summer sessions.

He pointed to the fact that summer use of existing schools would be equivalent to adding 500 rooms, at a cost of $20,000 per room, to the 1,800 rooms presently in Duval County schools. He estimated the cost of year-round air conditioning of school buildings at about 10 to 15% of the total school construction cost.

Recold Names Re-Strib as Idaho, Utah Distributor

SALT LAKE CITY—Refrigeration Engineering, Inc. products under the trade name, "Recold," will now be distributed in Idaho and Utah by Refrigeration Distributors Corp., Salt Lake City. The announcement was made by Hy Jarvis, president, Refrigeration Engineering, Inc.

Refrigeration Distributors Corp. was organized in 1948. Operating under the trade name, "Re-Strib-Co" the firm very early established an engineering department to furnish assistance to its accounts.

Re-Strib-Co headquarters are at 132 S. Second West in Salt Lake City. Ted R. Brown is president and general manager. Last year a division of the company was opened in Boise at 116 South 23rd St. with Raymond Payne as manager.

Climate Engineers To Handle Weathertrons

BLOOMFIELD, N. J. — Appointment of Climate Engineers Supply, Inc., Indianapolis, as a wholesaler for G-E "Weathertrons" has been announced by General Electric Co.'s Weathertron Dept.

Climate Engineers will distribute Weathertrons in 32 counties in Indiana.

For Winter and Summer Air Conditioning

SELL DETROIT'S COMPLETE CONTROL SYSTEM!

DETROIT CONTROLS' *Duo-Classic* System gives Simplified Control for Year-'round Air Conditioning

ONE Thermostat
ONE Function Selector
ONE Universal Control Panel
ONE Simple Installation Procedure

Duo-Classic simplifies every job!
Its modern styling, ease of use and simple installation make the Duo-Classic Control system easy to sell.

The Universal Control panel, prewired with high voltage and low voltage terminals for direct connection of the power supply and every component part of the entire heating-cooling system, is easy to install.

Since the Detroit Control Panel and Thermostat are designed for universal application, inventory problems of equipment manufacturers and wholesalers are simplified.

For complete, all-season air conditioning control, you need only install the DETROIT Universal Control Panel and the Duo-Classic thermostat. Build sales and satisfaction!

DETROIT CONTROLS supplies a complete line for the heating, air conditioning and refrigeration industries.

DETROIT CONTROLS CORPORATION
8900 TRUMBULL AVE. • DETROIT 8, MICHIGAN
Division of AMERICAN RADIATOR & STANDARD SANITARY Corporation

Representatives in Principal Cities • Canadian Representatives:
RAILWAY AND ENGINEERING SPECIALTIES, LTD.,
Montreal, Toronto, Winnipeg.

AUTOMATIC CONTROLS for
AIR CONDITIONING • DOMESTIC HEATING • REFRIGERATION • AVIATION • TRANSPORTATION • HOME APPLIANCES • INDUSTRIAL USES

For more information about products advertised on this page use Information Center, page 20.

Westinghouse May Up Prices on Some Cooling Products

SPRINGFIELD, Mass.—Higher costs on aluminum, steel, copper, and outside-purchased parts may force a slight increase in prices on Westinghouse refrigeration specialties, H. F. Hildreth, manager, has announced.

Products that may possibly be affected are room air conditioners, water coolers, dehumidifiers, and soft drink bottle dispensers.

In a letter to distributors, Hildreth emphasized the price pinch.

"We have tried to buy wisely and to anticipate increases as well as we could," he said. "But, as soon as the higher costs are entirely reflected in our finished products, we believe that we will have a difficult situation holding the line.

"We have no specific plans at this time for increased prices, nor do we know the amount that it might be necessary for us to pass on to our customers. The indications are, however, that prices will take an upward trend as soon as all of the costs we are confronted with are reflected in our operations."

Refrigeration Wholesaler Sales Rise 30% In May

WASHINGTON, D. C.—May sales of air conditioning and commercial refrigeration equipment distributors rose 30% compared with the same month of 1954 and were up 4% from April, according to the Bureau of the Census.

Compared with the like year-ago period, their sales for the first five months of 1955 gained 14%.

Sales of distributors of electrical appliances, TV and radio sets and parts, and electronic parts and equipment in May were 16% ahead of the corresponding 1954 month and unchanged from April. Sales of these distributors in the first five months of this year increased 7% compared with the like period of last year.

Inventories of air conditioning and commercial refrigeration equipment distributors at the end of May were 8% higher than a year earlier and 2% above stocks on hand April 30. Inventories of the other distributor group were up 17% and 5%.

The Census Bureau estimated that May sales of all types of merchant wholesalers as a group were up 2% over April and were 13% higher than May a year ago. Sales for the first five months were 8% higher than in the comparable period of 1954. Inventories at the end of May were at about the same level as on April 30.

Church Awards Contract

CHATTANOOGA, Tenn.—Contract for air conditioning and heating of a $300,000 educational building for the Brainerd Baptist Church has been awarded to the Lennon Co. here, according to Rev. Connie A. Dabney, pastor.

4-Week Utility Drive Boosts Refrigeration Dealer Sales

JACKSON, Miss.—A four-week campaign conducted recently by Mississippi Power & Light Co. to boost dealer sales of commercial refrigeration equipment was a success, according to A. W. Hardin, assistant to the general sales manager.

Hardin said that during the drive, the utility's 12 commercial salesmen made 628 calls on commercial refrigeration prospects in its area and helped local dealers sell 17 automatic ice makers and approximately $275,000 worth of other equipment.

This did not include any air conditioning equipment.

The campaign was conducted from May 30 to June 24. Special emphasis was placed on ice-making equipment.

The majority of food handling customers in the company's service area were contacted personally and asked to consider the benefits they could obtain from modern commercial refrigeration equipment. In addition, 3,000 pieces of direct mail reminded them of these benefits.

Pritchard Appoints Tate

KANSAS CITY, Mo.—Tate Engineering & Supply Co., Inc., of Baltimore has been appointed sales representative for the state of Maryland by J. F. Pritchard & Co. of California here, manufacturer of cooling towers and packaged dehydration units.

Frozen Food and Meats Sales Raised 46% In Month After Doubling Frozen Food Space

LIDO ISLE, Calif.—Spectacular sales increases in both frozen foods and meats were recorded recently by Richard's Lido Market here following a $143,000 modernization project on the store.

Owner O. W. Richards said that doubling his frozen food space to a total of 1,900 cu. ft. boosted sales in the first month after the modernization by approximately 46%.

Adding a counter-service butcher case to his previously all self-service meat department increased sales by 20%. More hard-to-sell cuts were moved without cutting into self-service volume in the least, Richards declared.

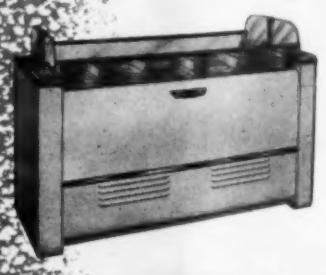
Richards expanded his frozen food department at the expense of the grocery department. He not only attained huge increases in frozen food sales, but, by attractively displaying canned goods in less space, he actually boosted their sales also. Rapid replenishing of the shelves is a key factor in this improvement.

Punxsutawney Names Jenkins To Cover Chicago Area

PUNXSUTAWNEY, Pa.—Roy D. Jenkins, who has been representing the Punxsutawney Co. in Michigan, will also cover the Chicago area, the company has announced. He will work with the "Beverage-Air" distributors in Michigan, northern Indiana, and Illinois, and also eastern Wisconsin.

your key to higher profits

MODEL LMS-21. The pace setter for frozen food merchandising. Available in 8, 15 and 21 cubic foot capacities.



MODEL CF-13. For frozen foods or ice cream. Available in 10, 13, 21 and 25 cubic foot capacities.

MODEL SDO-21. For frozen food and ice cream cabinet. Available in 10, 15, 21 and 25 cubic foot capacities.

MODEL IDOL-15. For frozen foods and ice cream. Available in 10, 15 and 21 cubic foot capacities.

MODEL OPS-8. Produce merchandiser. Length 94", width 34", height 34". Also available without superstructure.

...is the money making National line!

47 popular models! A complete line of cases, cabinets and freezers for *every* customer requirement!

High Profit—steady sales! A money maker for you because it's a money maker for your customers!

Quality you can depend on! Better built for dependable, economical service. Functional modern-market styling. Vapor sealed insulation. Exclusive, patented removable defrosters.

Priced to sell! National is America's popular priced line. For competitive selling it can't be beat! Dollar-for-dollar, it's today's biggest value in refrigerated equipment.

National MARKET EQUIPMENT CO.

ARE YOU LOOKING FOR A PROFITABLE FRANCHISE?
WRITE TODAY FOR COMPLETE INFORMATION!

NATIONAL MARKET EQUIPMENT CO.
P.O. Box 288, Royal Oak, Michigan

I'm interested in learning more about how I can qualify for a valuable National distributorship. Please send full information.

NAME.....

ADDRESS.....

CITY.....STATE.....

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How Thermostat Which Anticipates Heat, Cold Can Improve Performance

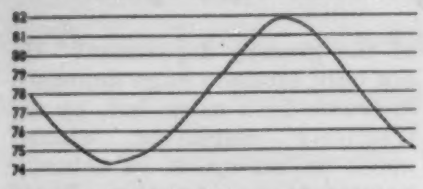


FIG. 1—Wide fluctuation of temperature is likely to result if thermostat lacks provision for heat anticipation.

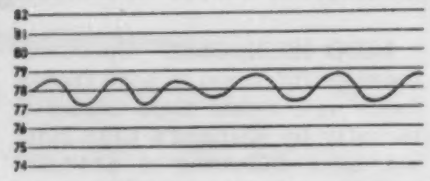


FIG. 2—With heat anticipation in thermostat temperature variation is slight.

By Kenneth Behr, Chief Application Engineer, Lennox Furnace Co., Marshalltown, Iowa

Heat or cold anticipation in a thermostat is a lot like a car in motion. A car, once in motion, tends to keep rolling, resists any effort to stop. To stop it you have to apply the brakes.

Let's say you're driving along and you see a child run out into the street after a ball. You immediately apply the brakes. But between the time you saw the child and applied the brakes, and the time the brakes actually stopped the 3,000-lb. car, there were two kinds of time lag.

There was the time lag in your nervous system, called reaction time, and the time lag it took the brakes to stop the car, called response time.

Heating and cooling systems have what is called a "thermal lag." Like a flywheel, they tend to keep going once they're "on," overshooting the thermostat setting several degrees. And when they're "off" they delay in furnishing heat or cooling to rooms the instant it's needed.

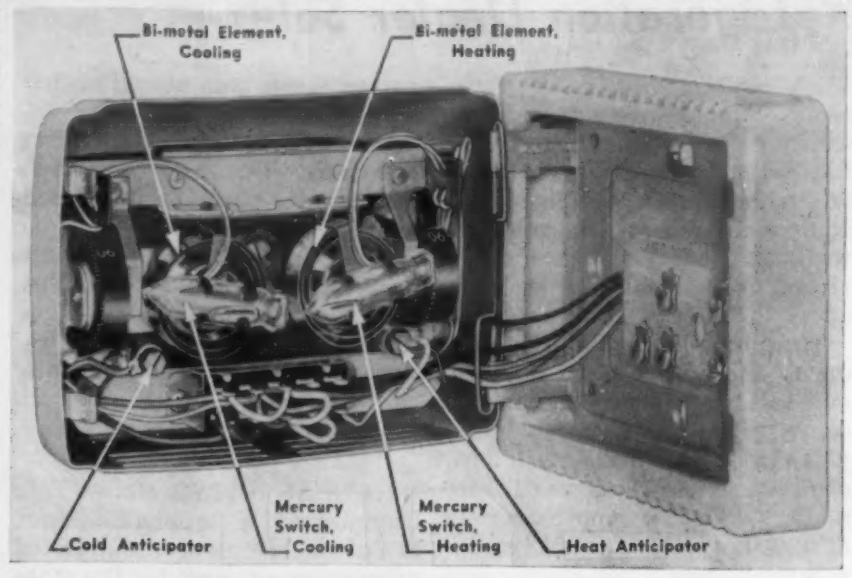


FIG. 3 shows working parts of new thermostat for year-round use which "anticipates" both heating and cooling requirements.

As a result rooms become uncomfortable before the system can meet temperature needs.

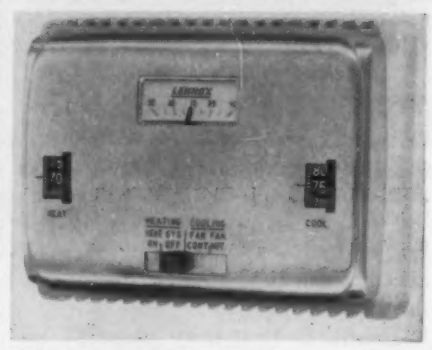


FIG. 4 is external view of new year-round thermostat.

Heat or cold anticipation is a lot like that car. If you could have anticipated, could have stopped the car, automatically, the very instant the child darted out into the street, there would have been no time lapse . . . no overshooting of where you would have liked to have stopped.

Must Lose Heat First

Heat builds up in the bonnet of the furnace, in the air in the ducts, in the walls, floor, and furnishings of the house, If the burner runs right up to the second the thermostat stops demanding heat, you've got all that heat in the bonnet and ducts to get rid of before the fan shuts off on fan "off" setting.

Thus, without heat anticipation, heat does tend to override, by as much as 4° from the thermostat setting, as you can see in the graph in Fig. 1.

With heat anticipation, plus continuous air circulation, you have the finest comfort control in existence.

The system is designed so temperatures can be held at or within ¾° of the thermostat setting, as you can see by the graph in Fig. 2.

As you know, the heat anticipator is a small heating element, located next to the bimetal of the thermostat. It's wired so that it warms the bimetal after contacts in the thermostat close.

Shortens 'On' Cycle

This shortens "on" cycle of the thermostat so the burner cycles more frequently, to produce more even temperature control and prevent overriding. In effect, heat anticipation satisfies the thermostat slightly before room temperature satisfies it.

A new combination thermostat for year-round air conditioners is equipped with both heat and cold anticipation. This thermostat is the master control for combination cooling and heating units with a 24-volt system.

The cold anticipator in this thermostat performs the same function for cooling as its heat anticipator does for heating. The cold anticipator is likewise a small heating element located next to the cooling thermostat bimetal.

However, it heats the bimetal on the "off" cycle. While the contacts of the cooling thermostat are open, the heater warms the bimetal. This reduces the time it normally takes the thermostat to respond to room temperature changes. The heater is not energized while the cooling system compressor is running.

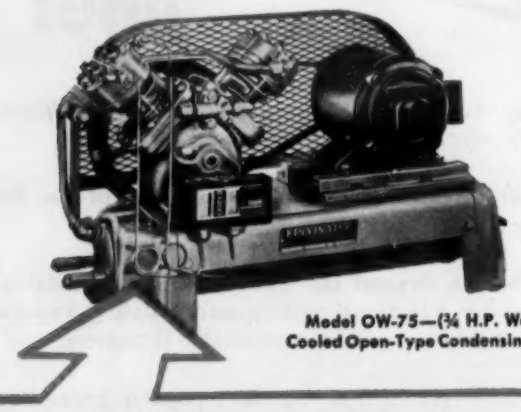
(Concluded on next page)

Get KELVINATOR and you know you get Trouble-Free Service!

Get Polarsphere Sealed Condensing Units with a Proven, Unequalled Record of Dependability!

Internally mounted, hermetically sealed units. Light in weight with exceptional structural strength. Give long, efficient, quiet operation. The finest refrigeration mechanisms you can buy. A complete line from 1/5 H.P. through ½ H.P. for a wide range of applications.

Model K352CR—¼ H.P. Capacitor Start



Model OW-75—(¾ H.P. Water-Cooled Open-Type Condensing Unit)

OPEN-TYPE CONDENSING UNITS EXTRA CAPACITY—EASIER TO SERVICE

★ Air-Cooled ★ Water-Cooled ★ Combination Air & Water Cooled ★ Space-Saving Truck Units

No other open-type condensing units can compare with Kelvinator for performance—long trouble-free service, and price. Extra-large air-cooled condensers; extra-capacity, water-cooled condensers. Extra-heavy-duty construction and precision built throughout. A complete line from ¼ H.P. air-cooled through 5 H.P. water-cooled.

PACKAGED FOR HOUSEHOLD & COMMERCIAL CABINET REPLACEMENTS

Model DK352C ¼ H.P. Capacitor Start

High Capacities! Competitively Priced!

A complete line of 10 Low and High Starting Torque models. ⅛ H.P. through ⅓ H.P. All models equipped with "plug-in" type relays. Wiring and mounting bracket on capacitor start models.

See Your Refrigeration Wholesaler Or Mail This Coupon

Commercial Dept. Kelvinator Division
American Motors Corp., Dept. AC-8B
14250 Plymouth Road, Detroit 32, Michigan
I am interested in more information about
☐ Sealed Compressors, ☐ Open-type condensing units.
☐ Sealed-type condensing units.
Name_____ Title_____
Company_____
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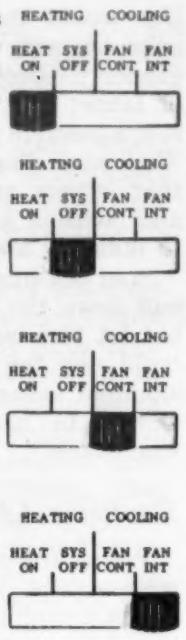
When your business depends on cold you can depend on

Kelvinator

Specialists in Refrigeration Since 1914

For more information about products advertised on this page use Information Center, page 20.



Heating system cycles to keep room temperature at the setting on HEAT temperature selection dial.

Both heating system and cooling system remain OFF regardless of room temperature fluctuations.

Cooling system cycles to keep room temperature at the setting on COOL temperature selection dial. Fan (blower) runs constantly to circulate air.

Cooling system and fan (blower) both cycle to keep room temperature at setting on COOL temperature selection dial.

FIG. 5 illustrates various settings of heating, cooling, and fan switch of thermostat shown in Figs. 3 and 4.

Heat Anticipation--

(Concluded from preceding page)

While cold anticipation elements are sized so they will not cause excessive short cycling, they do reduce the time lag between cycles, compared to a cooling system without cold anticipation.

Cold Anticipation Gives 'Mellow Comfort'

Cold anticipation causes the compressor to run more frequently. Like the burner that cycles more frequently, cold anticipation thus produces what might be termed "mellow-comfort."

Continuous fan circulation plus shorter compressor cycles is designed to produce temperature control with a 2° differential from the thermostat setting.

When the thermostat calls for cooling, remember that before cooled, dehumidified air is actually delivered into the room, the evaporator or cooling coil must be chilled, all the air in the ductwork and the duct metal itself must be chilled. Then this air, delivered into the room, must reduce room temperature before the thermostat is satisfied.

All this takes time, time that can cause wild swings in temperature, humidity, and comfort, as much as 8° temperature differential and 20% humidity differential.

Humidity Reduced

How does cold anticipation affect humidity? First, cold anticipation, as stated earlier, shortens the cooling "on" and "off" cycles to maintain a 2° temperature differential. This keeps room temperature within 1° above or below the thermostat setting.

Without cold anticipation, the cooling system tends to have longer "off" and "on" cycles. When the system has longer "off" cycles, the air in the ducts and in the occupied spaces has a chance to warm up to as much as 5° above the thermostat setting.

The water collected on the evaporator or cooling coil when the coil was cold, can amount to as much as one pint. On continuous air circulation, the warm air now passes through the cooling coil, absorbs this pint of moisture and adds it to the room air.

Also at the same time, while the compressor is off, infiltration takes place constantly. In other words, while cooling is off, outside air, hot and humid, is constantly leaking into the house, adding its share of humidity and discomfort.

Now, when at last the thermostat reacts and demands cooling, all the warmer air in the ducts, plus all the air in the rooms, has to be chilled and dehumidified, returned to a comfort condition at about 50% relative humidity. This also takes time, so the system has longer "on" cycles with all its attendant evils.

However, with cold anticipation plus continuous air circulation, you have the finest comfort control man can devise. The cold anticipating element heats the bimetal element on the "off" cycle, thus causing the compressor to start up and provide cooling before room air becomes uncomfortable.

This "pre-start-up" of the compressor cools the air in the ductwork, wrings out any moisture it may have picked up, and chills the duct metal.

Then, before discomfort can be experienced, the properly chilled, dehumidified air is delivered into the rooms to maintain comfort conditions hour after hour after hour.

This shorter cycling never gives outside air time to infiltrate to the point where it can build up humidity and heat in room air. Before much infiltration can possibly take place cold anticipation has the system started up again.

Breaks Up Dead Air Pockets

In addition, continuous air circulation breaks up dead air pockets, keeps air in gentle refreshing motion without drafts, makes sure the thermostat senses true room air temperature.

CAC compensates in every room for constantly shifting house exposure to sun and wind, acts as a system balancer. And cold anticipation takes over before cooling is actually needed, to make sure there's no extra lost time, keeps temperature and humidity at comfort levels.

Incidentally, the problem of cold anticipation brings up the point of sizing the system just right, not too small because you'll have long "on" cycles and eventual discomfort; not too big because you'll have long "off" cycles and short "on" cycles, which also bring discomfort.

The bigger the cooling unit the bigger the cooling coil. The bigger the cooling coil the more moisture it will hold. This moisture will be picked up and added to the occupied spaces on the "off" cycle under continuous air circulation, because the warm air holds much more moisture than cold air.

The oversized cooling unit quickly cools the house down, but stays "off" longer, permitting infiltration of moisture and heat-laden outside air into the rooms.

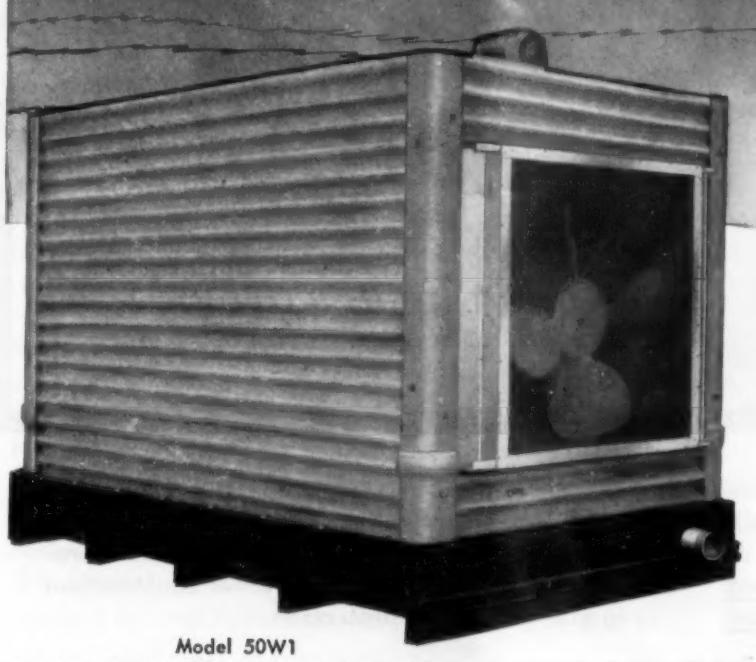
Incidentally, when older persons live in an air conditioned house, cold anticipation plus continuous air circulation is more important than ever. Older folk generally like the temperature near 80°. At this elevated temperature the humidity greatly affects over-all comfort.

The same person, comfortable at 80° F. and 45% relative humidity, is going to start complaining if the humidity goes much higher at that temperature.

To Cool New Fairmount Plant

WILMINGTON, N. C.—Fairmont Mfg. Co.'s new plant here, being erected at a cost of $100,000, will be air conditioned, it was announced by Emmett Cox, manager.

NEW forced draft
WOOD AQUATOWERS*
for longer life when the going is tough



Model 50W1
Job Assembled--Asbestos Cement Board Casing

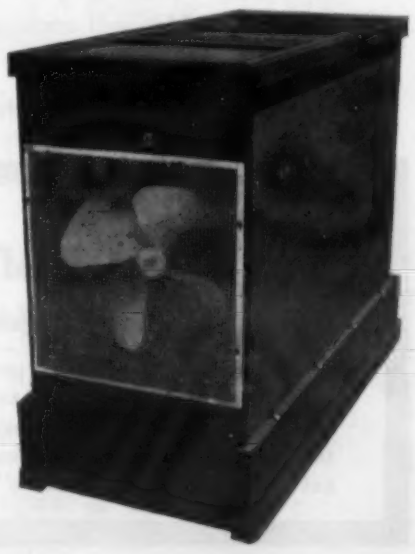
Marley offers a new series of cooling towers specifically designed to combat corrosive atmosphere and water . . . to "go the full distance" under the most rigorous operating conditions.

All-redwood structure and heavy asbestos cement board or wood casing—both impervious to corrosion—are a positive guarantee of prolonged service life. In the Marley forced draft design the fan and mechanical equipment have the advantage of being out of the discharge air stream.

But regardless of your climate, there will be times when you'll specify these new towers because of their attractive appearance and their unique adaptability to almost any location. Because air discharge is vertical, wind direction is not a factor in locating Forced Draft Wood Aquatowers. Smaller models are factory assembled and the larger models can be hoisted on standard freight elevators because they are shipped disassembled.

New Forced Draft Wood Aquatowers are available in 10 models for services from 3 to 50 tons. Ask your nearby Marley Sales Engineer for a copy of Bulletin FDWA or write direct to Marley, world's leading producer of water cooling towers for air conditioning and refrigeration.

Model 5W2
Pre-assembled--wood casing



"Nothing cools as well as water . . .
Nothing cools water as well as a Marley Cooling Tower"

MARLEY®

The Marley Company

*Trademark Reg.

Kansas City, Missouri

Inside Dope

By GEORGE F. TAUBENECK

(Concluded from Page 1, Col. 1)

"We realize," they should say, "that our cultural accomplishments are inferior to yours. We can learn how to rise above chewing gum and such by studying your customs."

Voice of America propaganda may be ignored abroad unless it is almost as humble as this.

"Here is what we know about a few processes," our propagandists should offer. "Take what you like—leave the rest. We realize that many of the things we do aren't applicable to your operations and traditions."

Like the Mormon Lads

Mormon missionaries could be the guide to our propagandizing of the American Faith. From Utah young men scatter all over the globe to preach their unusual but admirable ideas and faith.

These teen-age boys support themselves wherever they go. Somehow or other they integrate themselves into the lives of ordinary people in places such as Australia and India, Brazil and Egypt, Norway and Belgium. How? By living with, and as, the folk in those lands. Before they return home they make hundreds of converts in their modest manner.

Because we are the strongest nation on Earth, we are envied and hated. Hence, it might be wise to take a leaf from the Mormon Book and evangelize our ideas with modesty.

American missionaries should make it clear that we aren't planning to conquer the globe in a World War III. We hope (with ostrich-heads buried in sand, maybe) that another war won't come.

Instead of conquest, we are eager to produce and distribute those creature comforts which mean so much to the "common man." All around the globe. We don't want to kill; we want to raise living standards.

On the other side of the fence, dupes of Socialism could and should be led to wish they were enjoying the Right to Pursue Happiness as we do.

American missionaries can pass on these facts: We spend our own money for stuff we want. We dress well and eat heartily. We see movies and ball games regularly, fish and hunt when we feel like it, gamble a little on the horses or at bridge and poker, and relax in cocktail lounges, on beaches, and while motoring. We enjoy pleasurable vacations, indulge whims, and still have enough money left to save and invest in capitalistic enterprises.

Every American can buy the kind of happiness he desires *with his own money.* Nobody can tell him that he mustn't smoke or drink, or that his daughter shouldn't have singing lessons if he thinks she has a sweet and lustrous voice.

Under Socialism (our missionaries could soapbox) freedom of choice is obliterated. Party Planners force you to spend your wages on things you may not want, prevent you from acquiring things you need and would appreciate, and tell you where you must go on your alleged vacations.

In March, 1864, Abraham Lincoln advised a delegation of New York workingmen:

"The strongest bond of human sympathy, outside of the family relations, should be one uniting all *working* people, of all nations, and tongues, and kindred. Nor would this lead to a war upon property or the owners of property. Property is the fruit of labor; property is desirable; it is a positive good in the world. That some should be rich shows that others may become rich, and hence is just encouragement to industry and enterprise.

"Let not him who is houseless pull down the house of another, but let him work diligently and build one for himself, thus by example assuring that his own should be safe from violence when built."

Realistic Choices

Plain people contacted by our missionaries either will enjoy life in a capitalist republic (with its allowances for differing tastes and eccentric mannerisms) or be trapped by a police state (with its concentration camps, mass murders, and flagrant violations of privacy).

This double-edged imperative is the fundamental issue of our scary times.

Let's take another look-see at our present situation, and compare our troubles and triumphs with past generations. The 18th and 19th Centuries were Ages of Enlightenment. Slavery was abolished, science and technology sunbursted, and the philosophy of Peace and Plenty pervaded.

Bright converts of our more humble missionaries, we hope, will try to revive that glorious live-and-let-live philosophy in their own countries. Whereupon those lands will be more likely to be tolerant, quit asking for hand-outs from us, and be proud of themselves.

Down to Cases

Our missionaries can ask these pertinent questions:

"Are you willing to fight for your right to be *human* and *different,* or do you want to live like Ants? Do you choose to be a rubber-stamp-number on a uniform, or do you yearn for recognition of your personal worth? Your answer—when multiplied by the number of other human beings you influence—will determine the trend of civilization for the next two or three hundred years."

Higher living standards, ultra-freedom for personal development, and almost everything anyone could want are possible when freedom and liberty (the right to be different, if one so chooses) pervade a nation's atmosphere.

"Liberty," Woodrow Wilson wrote, "has never come from government. The history of liberty is a history of resistance. Liberty amounts to limitations of government power, not the increase of it."

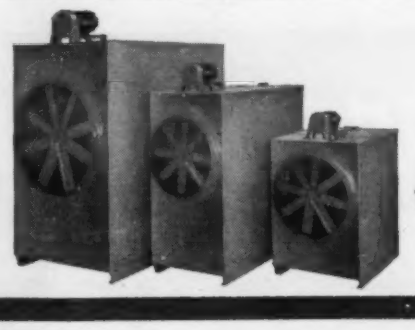
Socialistic tyranny (attempting to PLAN everything, all around the world) leads inexorably to War.

Capitalism on the other hand, promotes peace and plenty, because it doesn't want to be disturbed in its pursuit of profits and gladness.

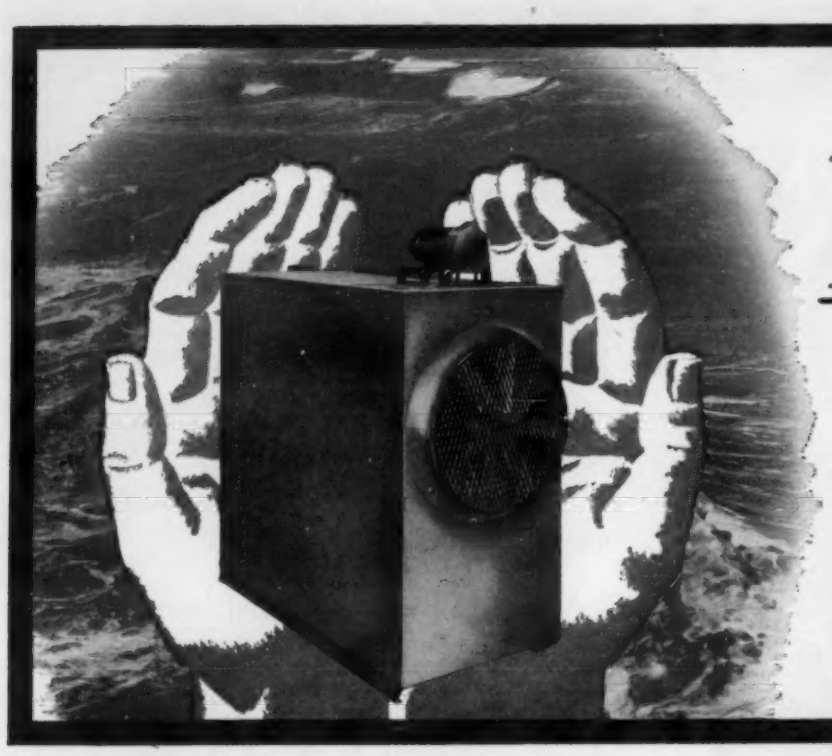
Let's promote Free Enterprise Happiness and evangelize it. Let's re-sell this philosophy to ourselves, to our fellow-citizens, and then to all the world. But let's do it with humility.

"Go ye therefore unto the far corners of the Earth. . . ."

HALSTEAD & MITCHELL
COOLING TOWERS



2 thru 120 TONS



Protected Steel

adds new years of life!

Steel in cooling towers undergoes constant corrosive attack by both water and water-treatment chemicals. Halstead & Mitchell combats this rusting . . . adds years to cooling tower life . . . by Protected Steel, a new concept in steel protection. Protected Steel is not simply a treatment, but a whole new approach to the problem of steel subjected to constant exposure to water. Halstead & Mitchell provides this added value in cooling tower construction . . . to give you added protection.

TRIPLE-THREAT PROTECTION

Not one, but three individual finishes coat every Halstead & Mitchell sheet steel cabinet. Vinsynite phosphates the metal, providing *maximum* protection against corrosion. Vinyl Zinc adheres tightly to the Vinsynite . . . is tough, flexible, inert . . . and provides high resistance to moisture vapor. Chlorinated rubber . . . tough and water resistant . . . provides film thickness, of vital importance in combating water immersion and high humidity. Applied *hydraulically* to force these protections into every conceivable opening, they provide the most satisfactory cooling tower steel protection ever developed.

STAINLESS STEEL FANS, SHAFTS

Halstead & Mitchell cooling tower fans and shafts are Stainless Steel. Rust-proof, of course.

EVERDUR BOLTS

For ease of disassembly after years of operation, H & M uses Everdur Bolts in all cooling towers.

Want More Details? Then Write for Catalogs or Visit Your Nearest Leading Wholesaler

EXCLUSIVE 20-Year Guarantee!

on the wetted deck surface against rotting or fungus attack

Only Halstead & Mitchell pressure-creosotes all wood used in its cooling towers, to provide the most satisfactory protection known against rotting, fungus attack, and corrosives in cooling water. That's why you get the "20-Year Guarantee" only from H & M.

HM Halstead & Mitchell

BESSEMER BUILDING • PITTSBURGH 22, PA.

For more information about products advertised on this page use Information Center, page 20.

Air Conditioned Churches Report Rise In Attendance

ST. LOUIS—Is your church air conditioned? Was there enough increase in attendance to justify the purchase and operating costs?

These were some of the questions asked in a recently church survey conducted by A. L. Munson, registered professional engineer, of A. L. Munson & Associates, consulting engineer and air conditioning specialist here.

All churches reporting that had air conditioning in operation last summer reported an increase in attendance.

The percentage increase was said to be anywhere between 25% and 40%. Summer attendance became equal to full winter attendance. The summer drop was eliminated. And new members were attracted.

INCREASE JUSTIFIED COST

Rev. Robert E. Harding of Maplewood Nazarene church reported that the attendance at his church increased approximately 25%, which was enough to economically justify the purchase and operating costs.

Rev. Wm. D. Watkins of the Webster Groves Presbyterian church said, "Our units have been in for some time. Because of this, it is difficult to estimate increase." But he indicated complete satisfaction.

Most of the churches have provided air conditioning in the church office, Pastor's study, and perhaps in a few meeting rooms. Many churches have air conditioned the sanctuary or auditorium only. Quite a few have provided air conditioning for their entire building.

Many of the churches who had not yet purchased air conditioning requested report on the results of this survey.

Nine churches that had air conditioning in operation last year reported that their attendance had increased. Several churches indicated that new members had been attracted to the church during the summer.

TYPES OF SYSTEMS USED

The types of cooling systems used were: conventional direct expansion systems (sometimes using packaged units), chilled water systems, and ice holdover systems.

In general, where only a Sunday morning and perhaps a Wednesday evening service is customary, the ice holdover (or ice accumulator) system will usually prove to be most economical to buy and to operate.

However, where meetings or services are held every day, it will usually be desirable to use either a conventional direct expansion system, or, where several sections of the building, each with varying load conditions, are to be cooled, a chilled water system will often be preferable, he commented.

Almost all churches employed a professional engineer to design their systems.

None of the reporting churches provided any accurate data on purchasing or operating costs, but the following "rule-of-thumb" figures can be used as a guide, Munson stated.

Purchasing costs:

For an ice holdover system $30 to $40 per seat.

For a conventional direct expansion system $35 to $55 per seat.

These costs vary somewhat according to the size of the church and the type of system required, and could be less in some cases, he said.

But even using top figures, when based on a 10 year amortization period, the average weekly costs in St. Louis would only be:

Approximately 10 cents per seat per week to purchase air conditioning.

Approximately 1½ to 2 cents per seat per week for operating costs. This is probably less than most churches anticipate it will cost to air condition their sanctuary, he commented.

Munson listed these advantages of air conditioning:

1. Increased attendance.
2. Increased collections.
3. Elimination of distracting outside noises.
4. Less cleaning and redecorating, since all circulated air is being filtered.
5. Bodily comfort all year around, assuring more concentrated attention to the service.

Existing churches usually present unusual and difficult design problems to the air conditioning engineer because he must not interfere with the beautiful interior design or decor, while still providing an adequate supply of conditioned air to all parts of the auditorium or sanctuary—without draft or noise.

Almost 50 churches cooperated in this survey.

Of those churches reporting, approximately 58% had or were installing air conditioning, 14% were not even considering the idea at this time, 14% were planning to purchase air conditioning in a year or two, 14% were talking about the possibility.

Answering the question, "Was there enough increase in collection to justify economically the purchase and operating costs?", there seemed to be divided opinions, although most churches did not comment either way.

Perhaps this indicates variations in accounting systems, yardsticks of comparison, or the lack of any attempt to accurately determine whether or not the system was "paying-off" in the hard-headed business sense, Munson said. At any rate, the vote seemed to be 3 to 2 in the affirmative.

Accurate data on increased tendance was made available by the Pastor of St. Patrick's Roman Catholic church in New Orleans, which was air conditioned in the spring of 1953.

The figures for this historic church, kept by the staff, showed that attendance increased 44% after air conditioning was installed.

Attendance before air conditioning averaged 1,611 persons per Sunday. After air conditioning, average attendance rose to 2,334 per Sunday.

It was estimated that if the additional 723 worshippers contributed an average of only 18 cents each week, these extra contributions would pay for owning and operating their system in about 10 years.

WOLVERINE IS FAMOUS FOR FIRSTS

Wholesalers have every right in the world to expect that manufacturers, whose lines they carry, will do everything humanly possible to advance the quality, services and promotion of products marketed through wholesalers.

This is the type of creative and productive thinking evidenced by Wolverine and the reason that over the years, Wolverine has become famous for new ideas—ideas that help both the wholesaler and user of copper tubing.

For example, many years ago Wolverine realized they could better serve the wholesalers by helping them eliminate some of the detail in pricing copper tube. Recognizing this, Wolverine became the first in the industry to introduce per coil, and per piece pricing.

And then there is the matter of packaging copper tubing. Wholesalers were once at their wits end as they attempted to keep rolls of tubing neatly stored and protected from damage and dirt. Thus, Wolverine introduced the industry's first cartoned roll of tube.

Wolverine's innovations proved of immense value to wholesaler, user and manufacturer alike, and cartoned tubing was quickly adopted by the industry.

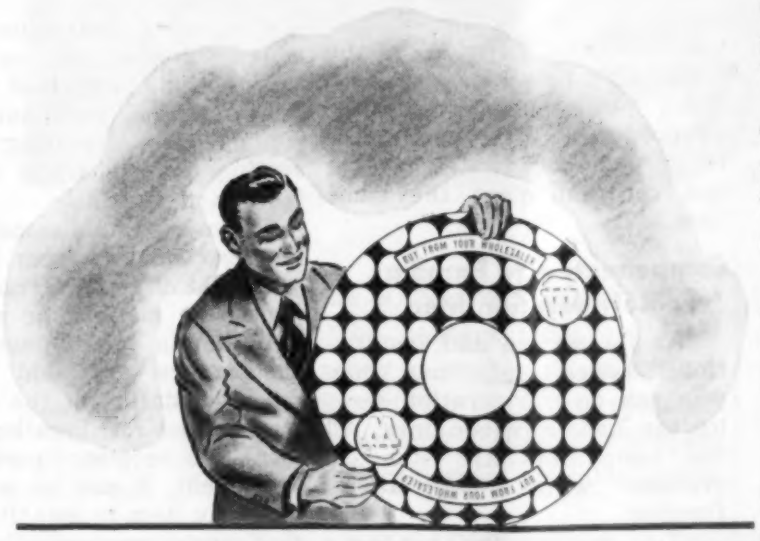
And now Wolverine has done it again. This time it's a *flat* roll of tube in a *round* carton that *rolls*—another first jam-packed with advantages for both wholesalers and their customers. It's a space-saving, time-saving packaging concept that means greater convenience and greater sales.

And that isn't all. Wolverine was also first in the tubing industry to recognize the importance of the wholesaler's place in America's economic system. That's why we have devoted such a large share of our advertising to strengthening the wholesaler's position—have told your customers more than 10 million times to "BUY FROM YOUR WHOLESALER."

When next you order tubing, remember Wolverine's Famous Firsts—and Wolverine tube, "the roll of tube that rolls." Remember, too, that *every* carton for *every* roll of Wolverine tube carries the words "BUY FROM YOUR WHOLESALER."

They are your guarantee of quality and service—two important firsts with your customers. WOLVERINE TUBE, Division of Calumet & Hecla, Inc., 1413 Central Avenue, Detroit 9, Michigan.

Buy the tube that stands by you in product, quality, service and wholesaler promotion. Make Wolverine your BUY word.



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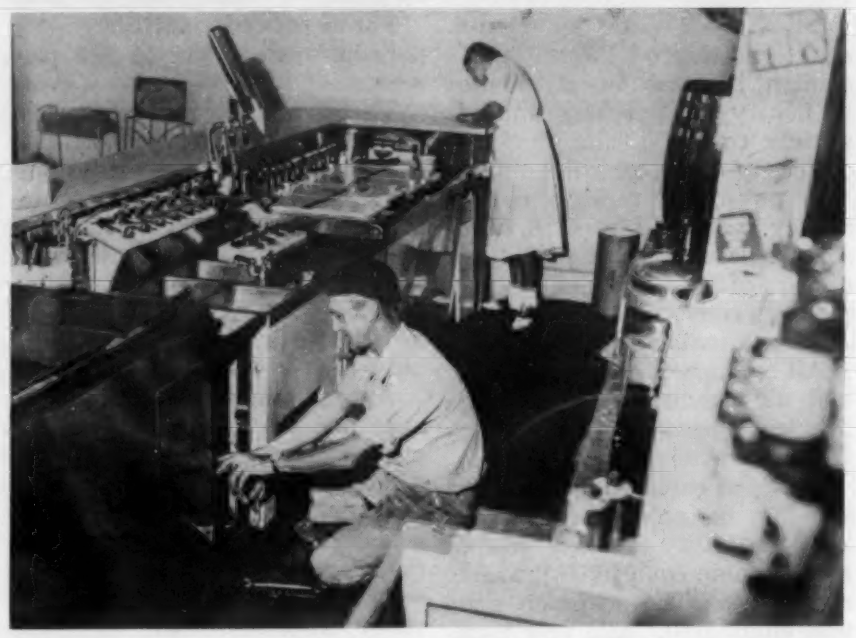
DIVISION OF CALUMET & HECLA, INC.
Manufacturers of Quality-Controlled Tubing and Extruded Aluminum Shapes

PLANTS IN DETROIT, MICHIGAN, AND DECATUR, ALABAMA. SALES OFFICES IN PRINCIPAL CITIES.
EXPORT DEPARTMENT, 13 EAST 40TH STREET, NEW YORK 16, N. Y.

Carbonators Can Provide Extra Profits for Refrigeration

LIGHT WEIGHT AND COMPACT, a carbonator can easily be carried by the serviceman in the trunk of his car to the installation site.

A FEW HAND TOOLS are all that are needed for installation. Used on this job are two box wrenches, two crescent wrenches, a tube cutter, and flare block and spreader. To tie in extra soda arms, standard soldering equipment may be needed also.



VERY LITTLE SPACE is needed for the carbonator itself. It can fit in any convenient under-counter location, though it should be placed as close to the dispensing point as possible to keep serving temperatures low.

NATIONAL LOCK
refrigerator hardware

for • DOMESTIC • COMMERCIAL
• LOW TEMPERATURE CABINETS

Surface Type Hardware
"Thru-the-Door" Hardware
Edge-Mounted Hardware
Thermoplastic and Thermo Setting Plastics
Finished Pressure Zinc Die Castings
Standard and Special-Purpose Screws and Bolts

standard and custom-built designs to meet your specific requirements
ask us about them

NATIONAL LOCK COMPANY
ROCKFORD • ILLINOIS
REFRIGERATOR HARDWARE DIVISION

Similarity of Product and Market Makes It Natural Sales, Service Companion

BIRMINGHAM, Mich. — Refrigeration servicemen and contractors are overlooking a good source of additional income by ignoring carbonator and cooler carbonator sales, believes Harold Lance, assistant to the president of Temprite Products Co. here.

"Refrigeration men are the natural ones to sell these items," Lance said, "because they are the ones most likely to be on the spot when the prospect is ready to buy.

Many Shy Away from Handling Carbonators

"But in most cases they shy away from them," he admitted. "We can't understand why, because a carbonator is a straight forward mechanical device. There is nothing mysterious about it. And a cooler carbonator is definitely within their normal field of operations."

A carbonator, he explained, is simply a device for mixing carbon dioxide gas and clean drinking water to produce soda or sparkling water for tastier drinks. The amount of carbon dioxide mixed with the water is measured in volumes. A good carbonator should produce at least four volumes, that is, carbonated water containing four times as much gas as liquid. Bottled carbonated drinks generally have 3.8 volumes, he noted.

A cooler carbonator is the same thing, he said, except that direct expansion coils are wrapped around the carbonator to provide both water cooling and carbonation at the same time.

Components Are Familiar To Refrigeration Men

"As for service and installation," Lance said, "any man who can do refrigeration service can handle carbonators. All the components are standard products with which he is familiar.

"Yet, despite the product's simplicity," he continued, "all manufacturers of carbonators are faced with a problem of distribution.

"When refrigeration men in an area do not want to handle carbonators, the manufacturer must turn to the gas salesman, the syrup salesman, or the restaurant supply house. Few of these necessarily have any mechanical knowledge, but in some areas they have proved to be the best carbonator salesmen.

Not Bought from Newspaper Ads

"A carbonator is not something the customer buys out of a newspaper advertisement," he explained. "There are only two times when he is interested in purchasing. One is when he is planning a new installation and is buying refrigeration equipment for it. The other is when he needs service on the carbonator.

"In either case, he is not in the mood to go out shopping for a carbonator, but is more inclined to accept the recommendation of the man who is putting in his refrigeration equipment or is servicing his carbonator."

Carbonator Demand Increases

The demand for carbonators increases, he noted, as the number of new soda fountains, cafes, bars, taverns, hotels, roadside stands, restaurants, theaters, drive-ins, park concessions, arenas, and entertainment centers grow.

The cooler carbonator fits in where water cooling, as well as carbonation, is desired.

In addition, carbonators are coming into increasing use in vending machines and in home recreation rooms.

The many establishments that have carbonators from 10 to 30 years old offer an attractive replacement market, he added.

While in many cases, the carbonators are sold on the recommendation of the man installing the refrigeration equipment as a necessary part of that equipment, it can be sold as a specialty item to establishments that could economically use a carbonator but don't realize it.

Economy Is Foremost Sales Story

Lance noted that the sales story for a carbonator is about the same as for the ice cube maker. The hot prospect is the bar, restaurant, and refreshment stand that sells its soda out of bottles. Here the salesman can tell a story in tremendous savings in money, space, and time by eliminating the expense, bulk, and handling of bottles.

Lance emphasized that there is nothing mysterious about a carbonator that should in any way baffle a refrigeration serviceman. It's basic components, no matter who the manufacture is, consists of a water pump, a tank in which the carbonation takes place, and either a relay or a magnetic switch to control its operation.

Water is pumped under pressure into the carbonator tank where it is mixed, either by jet action or by spraying into CO_2 gas. Thus carbonated, the water is piped to the dispenser.

Carbonated water level inside the carbonator is controlled either by high and low electrodes inserted into the tank or by a float. With the electrodes, an electric relay is used to start and stop the water pump. With the float, a magnetic switch is used for the same purpose.

Function of Carbonator

Function of a carbonator might best be explained by following through the operation of one specific type. The Temprite "Bantam 100," which uses a jet for turbulence and electrodes for control, operates in this fashion:

With the tank charged with CO_2 gas at approximately 80 lbs. p.s.i., a high velocity stream of water is pumped into the tank. The water enters through a jet orfice which directs the stream towards the bottom of the tank where it impinges on the water already collected there, creating considerable turbulence.

This turbulence causes the water mass to expose itself completely to the CO_2 atmosphere. In this condition, it readily absorbs five to nine times its own volume of CO_2 gas.

Carbonation Instaneous

Carbonation is instantaneous. The carbonated water is drawn from the bottom of the tank by means of a pick-up tube which

(Concluded on next page)

For more information about products advertised on this page use Information Center, page 20.

Carbonator Market--

(Concluded from preceding page)

is connected to the soda water outlet on the header plate.

The water level within the carbonator is maintained between the tips of the electrodes. When the pump is running, water enters the carbonator until the level reaches the high electrode.

At this point, current flow is established from the electrode through the water to the carbonator tank shell.

From there, it flows via the ground wire to the "ground" on the relay to the secondary winding of the transformer. The induced current now flows through the holding coil, then back to the high electrode.

The current, when passing through the holding coil, creates a magnetic field which attracts the movable armature. This movement closes mechanically the contacts of the low level electrode circuit and opens, simultaneously, the contacts of the pump motor circuit, stopping the pump.

Water now ceases to flow into the carbonator tank. When carbonated water is drawn from the dispensing faucet, the water recedes in the carbonator tank until the water level drops below the low level electrode tip.

This breaks completely all flow of current in the electrode circuits. Consequently, the holding coil is now de-energized, and the armature springs back, opening the electrode contacts, and closing the pump motor contacts. And so the cycle repeats itself.

3 Factors Involved

Lance pointed out that carbonation depends on three different factors. One is the temperation of the water, another is the pressure of the gas, and the third is the mixing of the two elements.

He explained that the lower the water temperature, the easier it is to carbonate—which means absorption of the CO_2 gas into the water.

Also, the higher the CO_2 pressure, the easier the gas will mix with the water. And, thirdly, the more broken up the water is—the more surface it presents to the gas—the more readily will it retain its carbonation.

Lance pointed out that there were many ways to correlate these three elements, depending on the conditions at the particular installation.

He noted that while water at 40° F. is most easily carbonated, water at 90° F. can be carbonated, if necessary. But, he recommends, the water used should be as cool as possible.

Water Can Be Pre-Cooled

Water can be pre-cooled before entering the carbonator by passing through a cooler first. It can be cooled while in the carbonator by wrapping refrigerant coils around the carbonator. Or it can be cooled after leaving the carbonator.

The water must be cooled at some point before dispensing or it will lose all its carbonation within seconds after hitting the atmosphere, he explained.

CO_2 pressure can be regulated at the gas storage tank by a gas regulator. Carbonators will operate satisfactorily at pressures ranging from 60 to 120 p.s.i. But, for greatest gas economy, 80 p.s.i. is recommended.

Lance pointed out that it is important also that the water circuit be entirely free of joint compound or oil of any kind. Oil or grease will seriously interfere with proper carbonation.

He pointed out that a filter is always a good thing to have on the water line, if the salesman can convince the customer to spend the money to put one on.

A filter not only gives the customer a higher quality carbonated beverage and helps forestall service trouble, but it also gives the serviceman a chance to revisit his customer periodically to change the filter for him.

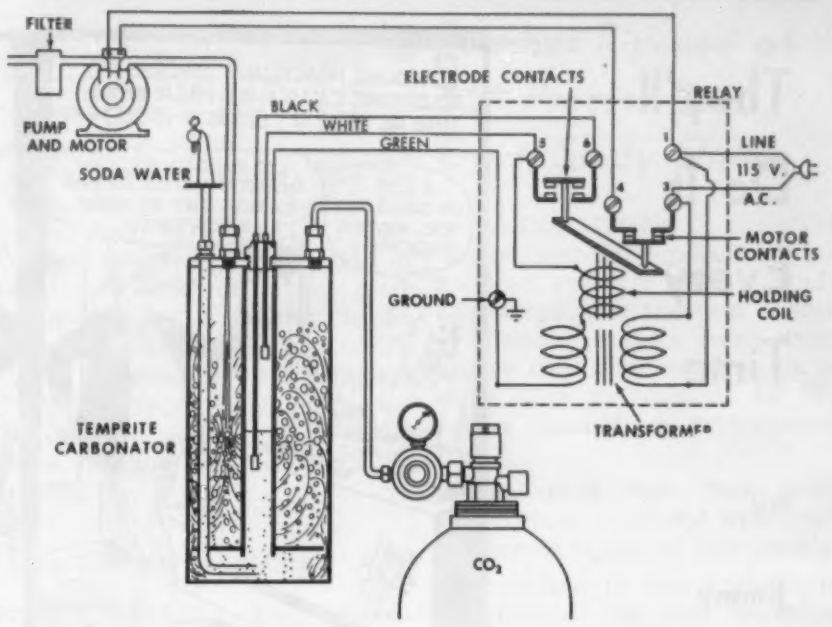
Installation of a carbonator is relatively simple and does not involve any steps or connections not already familiar to the refrigeration man, according to Lance.

He recommended that the carbonator be installed in a clean, accessible location as close as possible to the faucet.

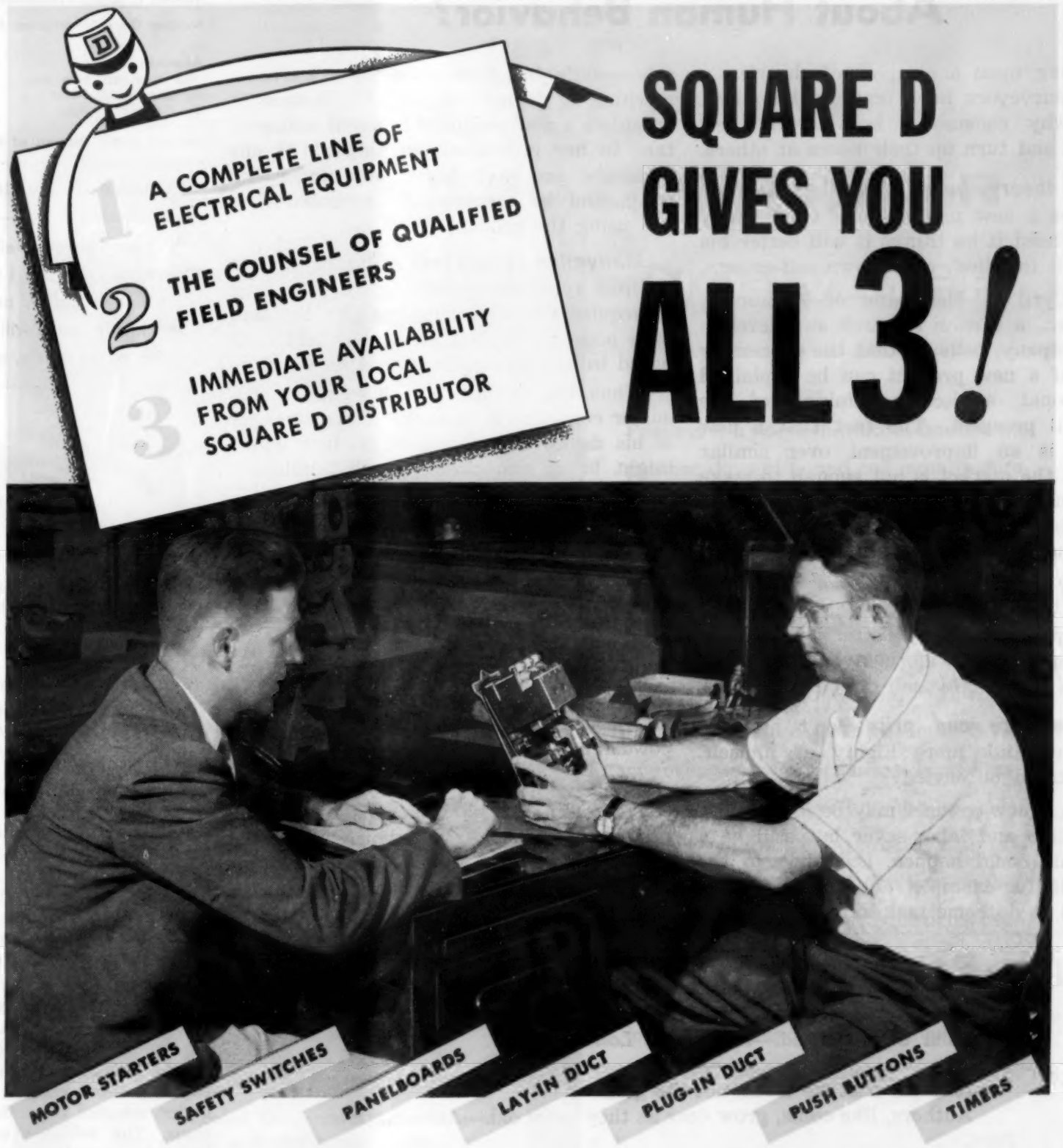
Electrical connections are those normal for water pumps and electrical controls. On the carbonator itself, there are just three connections.

There is a connection from the pressure regulator on the CO_2 drum to the CO_2 inlet on the carbonator. Cold water supply is connected to the water pump. The carbonator is connected to the dispenser faucet by a line of block tin, stainless steel, or other material not affected by carbonated water.

Modern carbonators, Lance said, are small in size and light in weight. They are easy for the serviceman to handle.



HOW THE TEMPRITE CARBONATOR with electrode control operates is shown in this sketch. When level of carbonated water reaches top electrode in center of carbonator, relay stops water pump. When level drops below lower electrode, relay starts pump again.



In the 60 Square D branch offices throughout the country there are Field Engineers ready to work with you on any electrical distribution or control problem. A substantial amount of their time is spent with original equipment manufacturers, air-conditioning contractors, architects and mechanical engineers—finding the one best way to handle any given job.

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"I have always felt that whatever the Divine Providence permitted to occur I was not too proud to report. The people are not served by pussyfooting, or by that sort of journalism in which nobody will ask who is the editor of a paper or the writer of an article, and nobody will care."—*Charles A. Dana.*

They'll Do It Every Time

by

Jimmy Hatlo

BIGDOME PRACTICALLY IGNORES ANY TELEPHONE CALLS MADE PRIOR TO THE TIME HE GETS IN (USUALLY 10:30)...
A LOT OF CALLS FOR YOU, MISTER BIGDOME...
LET 'EM CALL BACK.... ANYBODY WHO CALLS THIS EARLY CAN'T BE VERY IMPORTANT...
JIMMY HATLO
5-26
BUT THE ONCE-IN-A-FORTNIGHT HE CHUGS IN AT 9 A.M., OH, BOY.... THINGS ARE OF A DIFFERENT HUE....
HELLO--HELLO--J.P. BIGDOME CALLING MR. CROWNEY--NOT IN? WELL, WHY ISN'T HE? THAT'S A FINE WAY TO RUN A BUSINESS! AND YOU CAN TELL HIM I SAID SO! NO! I DON'T CARE IF HE EVER CALLS ME BACK!! GOODBYE!!
THANK AND A TIP OF THE HATLO HAT TO "SECRETARY," HOLLYWOOD, CALIF.

What Do We Really Know About Human Behavior?

Leaning upon a complex of theories, a pair of surveyors have tentatived an idea as to why consumers buy certain new products and turn up their noses at others.

Their theory, boiled down: A customer purchases a new product he doesn't really want or need if he thinks it will better his wife's, his families', or his own self-esteem.

Dr. Cyril C. Herrmann of Arthur D. Little, Inc., a Boston research and development company, believes that the success or failure of a new product can be explained by personal, subjective thinking of the individual prospect. The fact that a new product is an improvement over similar items on the market is not enough to make it a winner. That product must make prospective buyers feel it will boost their own evaluation of themselves.

For example, a new accessory for automobiles ought to give the car owner the idea it will make him a better driver—or a better equipped or more stylish neighbor. *It should enhance his self-esteem.*

Convenience and price don't make a consumer think more highly of himself. He wants to be envied!

Again, a new product may be inexpensive and a time and labor-saver but still be a flop. This could happen, according to the Theory if, for example, (1) that product is designed to do some task automatically for a housewife, but somehow she won't trust a machine to do her job; (2) the housewife considers a new product's function unimportant to her individual yearnings; (3) she feels she can keep her family under her wing, and be respected by neighbors, by *not* using the product.

Motivation researchers maintain there is a direct relationship between (a) the urge to acquire a new product and (b) the skill of a prospect in that particular field compared to how skilled he wishes he were.

Thus, the further below his goals a consumer considers himself to be, the stronger is his desire to buy a new product which might bring him closer to self-fulfillment.

Motivation researchers currently are fascinated by the mathematicians' "Game Theory." Devotees of this theory aver that, although most people are willing to gamble, they do so unscientifically. Psychological tests reveal that amateur gamblers bet more heavily when they're behind than when they're winning. Hence, in a situation where a person's evaluation of himself is lowest, his desire to buy a new product is most powerful.

Out of such human studies, we hope, will come *practical results* such as benchmark proofs of buying reasons which can guide both salesmen and product designers. This may be a long way off—but it's an exciting field of study.

The Bible, whatever else it may be—divine or human—is the greatest compilation of noble thoughts and deeds ever brought together and, as such, the greatest single instrument for popular education ever devised.—*Illustrated London News.*

It is the rust we value, not the gold:
Authors, like coins, grow dear as they grow old.—ALEXANDER POPE.

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OFF THE CHEST

General Electric Co.
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5 Lawrence St.
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Editor:

The suggestion in my recent letter to you regarding the advisability of drawing ASA into this "honest rating" campaign with ARI cooperation may not be the most desirable action, but it actually is practical and most certainly is preferable to the present inactivity. ASA's participation may not be essential, but could assist in establishing acceptable procedures, and in doing away with the misleading rating claims now so prevalent.

It is our belief that central, residential, cooling equipment, (as distinguished from room air conditioners) is generally rated by the manufacturer at a B.t.u. capacity that can be attained under selected operating conditions. The selected conditions, however, are often not realistic in terms of field conditions. Also, there are many other liberties taken with ratings, such as the omission of deductions for mechanical heat input to the compressor, heat input from blower motors, heat gain through jackets in out-of-space installations, nominal horsepower ratings instead of actual power consumption, etc.

The purchaser who buys effective cooling is not getting what he thinks if his equipment is rated at so high a suction temperature that little latent heat removal is possible except through sizeable derating.

That purchaser realizes the truth of the saying, "it ain't the heat, it's the humidity." It is necessary, therefore, that standards for rating, power consumption, dehumidification effect, and so on be clearly defined and accepted by our industry.

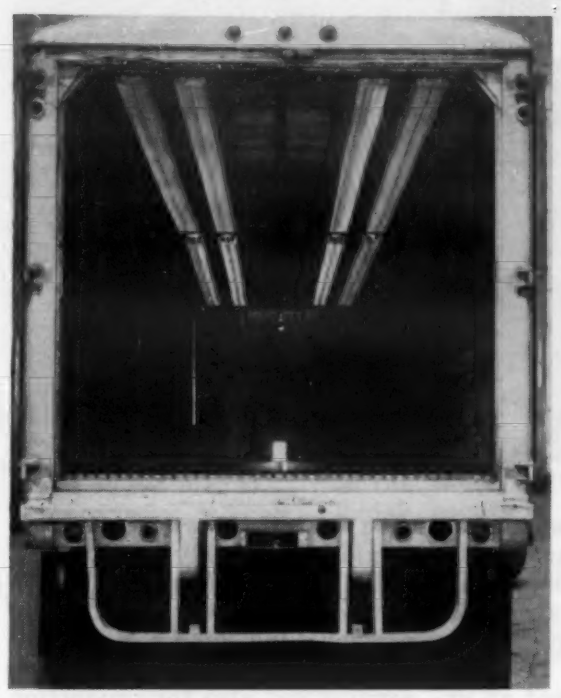
While our problem, to some extent, is a lack of adequate standards, it is also a resistance to the full acceptance of these standards. This should be corrected by the industry. To solve the problem is a difficult task. Adherence to such standards involves investment expense and effort. Unless acceptance is complete, those adhering would be at a disadvantage.

The industry must recognize that a "let the buyer beware" attitude invites outside intervention and the establishment of mandatory test methods that could be even more costly in set-up, operation, and reporting. Failure to act, it seems to me, must inevitably lead mortgage companies, loan guarantors, time-payement financing companies, and others to sponsor measures to secure their investment.

Our industry must take note that present practices weaken it as an industry, and can be used to take advantage of purchasers, thus strengthening the possibilities of regulatory legislation. In short, George, if we don't do it ourselves, someone else may do it for us.

L. H. HIRSCHBACH

Truck System Condensing Unit Driven by Gas, Electricity



FINNED COILS hung on ceiling of truck extend full length of body along the sides leaving center aisle with full headroom. The refrigeration system can be driven by gasoline when on the road and switched over to electric power when truck is not operating.

RIVERDALE, Ill. — A truck refrigeration system that combines a gasoline and electric-driven condensing unit with ceiling mounted finned tube evaporator coils inside the truck or trailer body is being produced by Triplex Industries here.

The "Freon" condensing unit is usually mounted under the body of the truck or trailer on the left side ahead of the rear wheels. It operates on automatic temperature control when plugged in on a.c. current while standing in the garage or at the loading dock.

On the road, the unit operates continuously on gasoline engine drive under manual speed control. Speed can be adjusted to hold whatever temperature is needed for the particular load.

The gas engine is started by engaging the gas engine clutch while the unit is running on electric drive, or by a rope starter. Electric starter, generator, and battery are available as an extra. Gasoline is supplied from the truck tank or, on a trailer, from a separate gas tank.

The unit will operate continuously on either gas or electric drive and can be run on both drives together in extreme hot weather conditions, as at the start of the pull-down period, when the refrigeration load is heavy.

Inside the body, a series of Peerless of America finned tube evaporator coils are hung on the ceiling. They extend the full length of the body along the sides, leaving the center aisle with full headroom.

They are so proportioned that there is enough tube and fin surface for the system to operate at a very low temperature difference between the coils and the air in the body, the manufacturer explained.

This slows frosting of the coils and retains humidity in the truck body. Defrosting is necessary only once a week or once a trip, usually.

Because the coils extend the full length of the body, the whole body is uniformly refrigerated by gravity circulation of cool air. This air is not more than 5 or 10° F. below the desired holding temperature of the load, the manufacturer declared.

Frozen food pre-chilled to 10° F. can be held at that temperature for the complete trip, he added.

Keco Names Spaulding

CINCINNATI — Keco Industries, Inc., announces the appointment of Earl L. Spaulding as office manager and Harry B. Kessler, Jr. as purchasing director. Keco manufactures special purpose air conditioning and refrigeration equipment.

Peaches Ripened at 65° Process Best, Govt. Study Shows

WASHINGTON, D. C. — The Department of Agriculture announced recently that a study has shown that the best canned or frozen peaches come from unripe fruit that requires six to eight days to ripen at 65° F., rather than from tree-ripened fruit.

The study was made with tree-ripened fruit and with fruit in various stages of immaturity.

According to the Agriculture Department, the fruit requiring six to eight days to ripen at 65° was judged superior in color, texture, and general acceptability, and equal in flavor to fruit needing only two to four days to ripen at 65° or to fruit ripened on the tree.

ASRE To Participate In Nuclear Congress Dec. 12 In Cleveland

NEW YORK CITY — The American Society of Refrigerating Engineers was listed as a sponsor and participant in the Nuclear Engineering and Science Congress to be staged in Cleveland, Dec. 12 to 16.

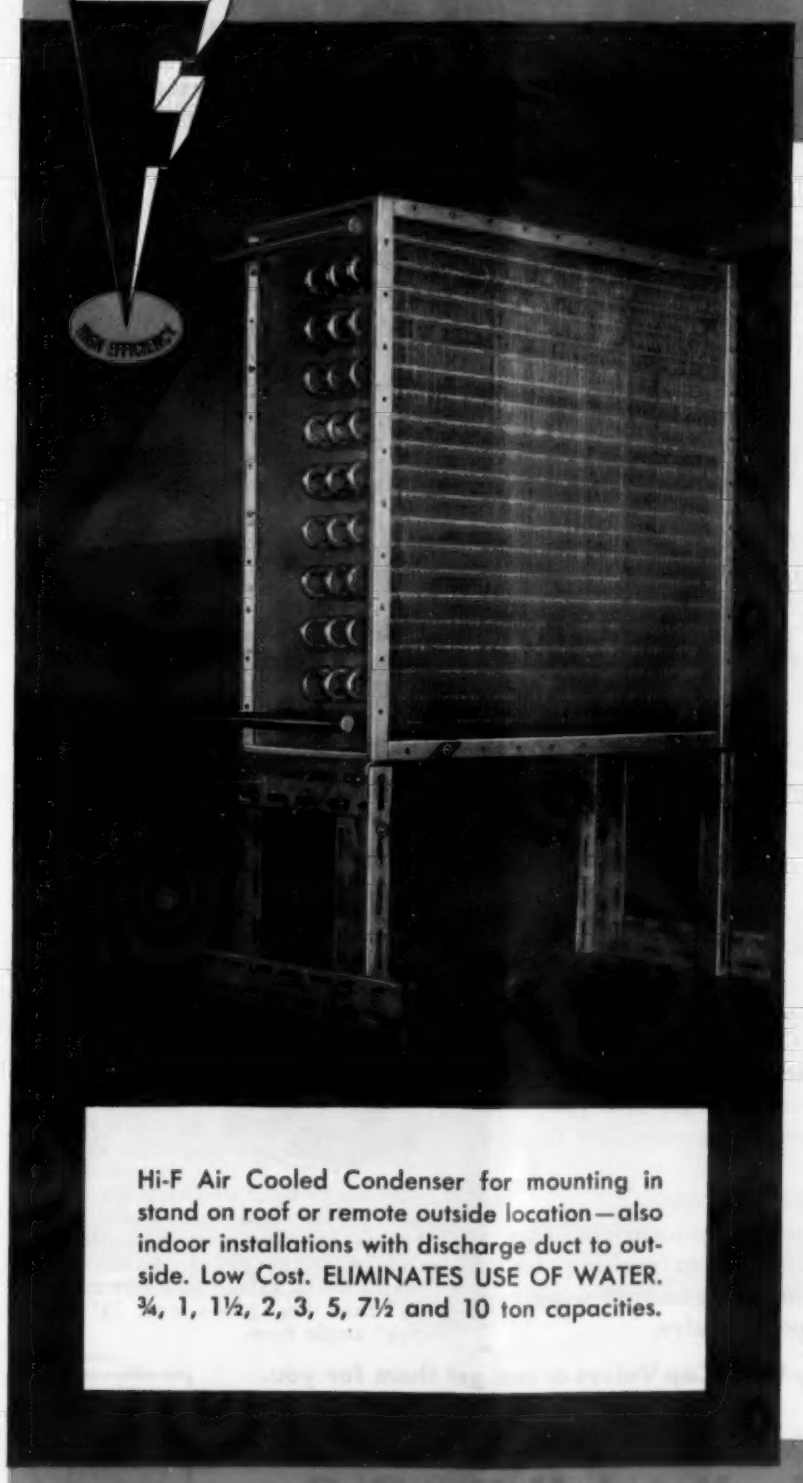
The congress will gather to present and hear the latest information on practically every phase of peacetime uses for atomic energy and its by-products.

U. S. and foreign engineers, scientists, and industrial representatives from 24 business and technical societies, 16 universities, 13 government bureaus and AEC contractors, and 34 major U. S. corporations will present nearly 300 papers in 50 sessions in one week.

Coordinating the arrangements for the congress is the Engineers Joint Council under the leadership of Thorndike Saville, dean of the college of engineering, New York university, and president of the council.

While technical sessions are under way at the Cleveland Public Auditorium, the first International Atomic Exposition will be staged in the building's five exhibit halls.

PEERLESS Hi-F (High Efficiency)
AIR COOLED CONDENSER
NO-WATER



Hi-F Air Cooled Condenser for mounting in stand on roof or remote outside location—also indoor installations with discharge duct to outside. Low Cost. ELIMINATES USE OF WATER. ¾, 1, 1½, 2, 3, 5, 7½ and 10 ton capacities.

Peerless is a name that dates back to the pioneer days of finned coil manufacture. With this background of experience it is no wonder that to "oldsters" in the industry and "newcomers" as well, the name Peerless stands for integrity.

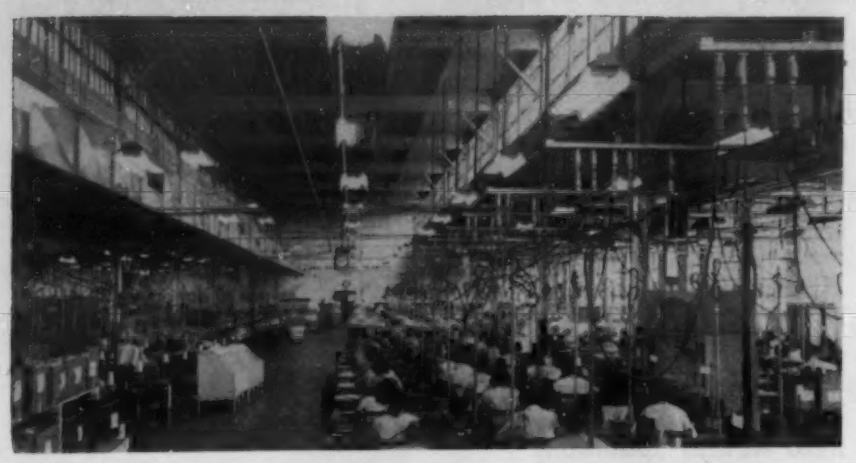
The Hi-F Air Cooled Condenser is the culmination of years of know-how reflected in a design that assures maximum B.T.U. capacity season after season. In addition, the new and exclusive patent-applied-for Peerless manufacturing process is so efficient and rapid in operation that on time delivery is assured to any contractor even under emergency conditions.

Write for Bulletin No. NW 155 containing full engineering information on the Hi-F Air Cooled Condenser.

MANUFACTURERS, NOTE—*Send us blue prints of your evaporator and condenser requirements for a Hi-F quotation. Please indicate delivery requirements.*

PEERLESS OF AMERICA, INC.
Dept. N, 5830 N. PULASKI ROAD, CHICAGO 30, ILL., U.S.A.

Bra Firm Air Conditions 2 Plants for One Price



LEFT: Main mill room of temporary plant of International Latex Corp. in Newnan, Ga., is air conditioned by UsAirco RK packaged central station unit. With ceiling height of 25 ft., supply duct was suspended at 14-ft. level to confine conditioned air to the occupied area below.

RIGHT: UsAirco RK-15's are used in smaller north mill room and cutting room of temporary International Latex Corp. plant in Newnan, Ga., discharging through dual deflection grilles with ample throw to carry through the conditioned areas.

NEWNAN, Ga. — The International Latex Corp. is planning to get double use out of its new air conditioning equipment—in effect air conditioning two brassiere manufacturing plants for the price of one.

Taking advantage of the versatility of packaged central station cooling equipment, it installed a 97½-ton system in the temporary mill it now occupies here.

But, when it new modern manufacturing plant is built, it intends to move the entire system, with the exception of certain unuseable portions of the main supply duct, into the new building.

The company adopted this strategy, according to William F. Applegarth, United States Air Conditioning Corp. representative in Atlanta, because marketing and promotion plans for its new product dictated immediate production without waiting for construction of the permanent factory building.

So the company leased an existing mill building on a short term basis and swung into production as quickly as possible. The heavy heat and humidity load of machinery, lights, and personnel indicated a clear need for cooling not only for human comfort but also for production efficiency and quality control.

The company's quality standards require rejection of all products soiled by perspiration.

System Meets 5 Needs

Faced with this situation, International Latex had to devise an air conditioning system that would meet five requirements:

(1) Quickly provide adequate cooling in the temporary plant.

(2) Involve a minimum of non-recoverable temporary installation costs.

(3) Be readily moved to the completed new plant.

(4) Be adaptable to the needs of the permanent installation.

(5) Use a minimum of floor space in both applications.

A proposal which met all standards was submitted by the Lindsey Electric Co., UsAirco dealer in Newnan. Lindsey was awarded the contract with instructions to proceed with all possible haste.

Within a week, Lindsey installed, for the plant office, a 5-ton UsAirco upright packaged air conditioner with pump and atmospheric cooling tower. Work was started immediately on the fabrication and installation of the trunk line duct for the main central mill room.

Ducts Hung at 14 Ft.

Although the roof in this center bay is approximately 25 ft. in height, the duct was hung at the 14-ft. level to confine the conditioned air to the occupied space below.

Additional duct was run to the adjoining west mill room and to the basement cafeteria. Since existing plant facilities did not include heating for the cafeteria a UsAirco blower-type gas-fired unit heater was installed to serve this area.

Two UsAirco 15-ton RK units, packaged central station equipment containing built-in evaporative condensers, were shipped immediately from Minneapolis and installed to serve the smaller north mill room and the cutting room at the south end of the building.

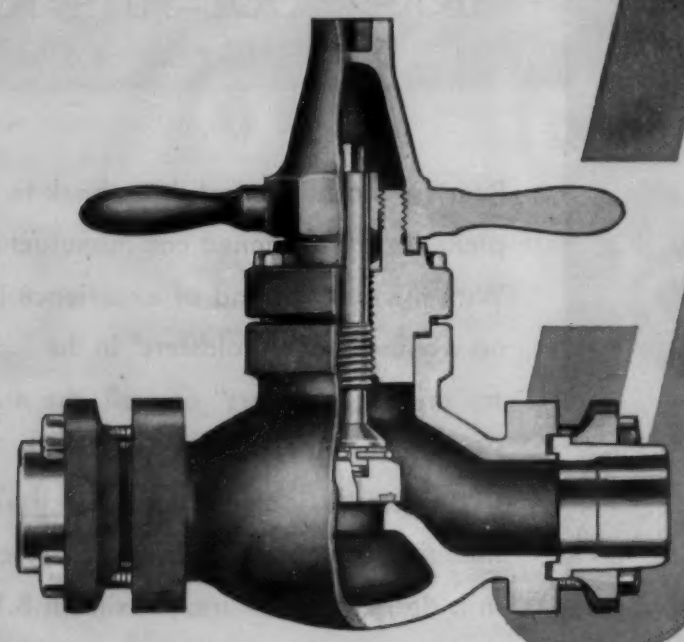
Free-standing, the units discharge conditioned air through dual deflection grilles with ample throw to carry across the respective conditioned areas.

With this partial relief, the system awaited the arrival of its main equipment, a 60-ton

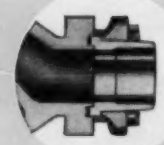
(Concluded on next page)

FIVE TYPES OF CONNECTIONS IN HENRY 5

SEMI-STEEL WING CAP VALVES

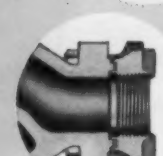


F.P.T. In Valve Body ½" thru 2½"

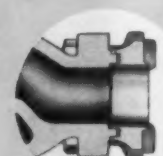


O.D. Solder Brass Adapter and Steel Flange 1⅜" thru 5⅛"

Steel Butt Weld Adapter and Steel Flange 1¼" thru 5"



One Piece F.P.T. Flange 1¼" thru 6"



One Piece Slip-on Weld Flange 1¼" thru 6"

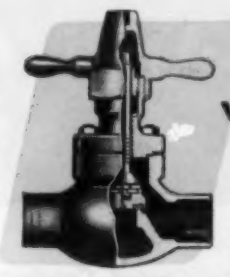
MAKE INSTALLATION EASY

Specify Henry Wing Cap Valves with their wide choice of end connections and your installation costs will always be low.

For example, steel pipe can be screwed directly into the valve body on sizes thru 2½", or it can be screwed into one piece F.P.T. flanges on sizes 1¼" thru 6". It can also be butt welded to separate steel adapters with companion flanges or used with one piece slip-on weld flanges in the same larger size range. If copper pipe is used, separate brass O.D. solder adapters with companion flanges permit soldering or brazing.

BRONZE BODY VALVES all have O.D. solder connections.

Henry offers you other features as well: Full capacity and unrestricted flow—patented self-aligning stem disc that will not rotate—resilient packing—back-seating design which permits repacking under pressure— a gasketed wing cap with socket which, when inverted, can be used to operate valve.



BRONZE ALLOY WING CAP VALVES

Made of bronze alloy to meet government specifications. Compact design —relatively light weight. Bolted bonnet construction and heavy wall bodies for maximum strength and safety. O.D. solder connections machined in valve body. Size range: ⅞" thru 4⅛" globe type; ⅞" thru 3⅛" angle type.

Your favorite wholesaler has a complete line of Henry Wing Cap Valves or can get them for you.

HENRY VALVE CO.

MELROSE PARK, ILLINOIS

(Chicago Suburb)

Cable: Hevalco, Melrose Park, Illinois

Valves, Driers, Strainers, Control Devices and Accessories for Refrigeration, Air Conditioning and Industrial Applications.

For more information about products advertised on this page use Information Center, page 20.

Double Conditioning--

(Concluded from preceding page)

UsAirco RK unit being fabricated to order.

Working on a 24-hour production basis, UsAirco completed the unit, subjected it to the operating tests which are required of all UsAirco equipment regardless of time requirements, and shipped it to Newnan by Red Ball freight car.

Special railway routing was culminated by the use of a special locomotive on the final leg of the trip which delivered the single car to its destination.

The 60-ton unit arrived at the Latex plant at 6:30 on a Sunday morning and was completely installed and in operation less than eight hours later.

Guaranty Building Gets Full Air Conditioning

INDIANAPOLIS—Officials of Klein & Kuhn, real estate management firm, announced recently that the contract has been let for the complete air conditioning of the Guaranty building here.

The announcement by Klein & Kuhn brings to a total of five, the number of member buildings managed by the company to have been or will be fully air conditioned during 1955.

CHILLED WATER COOLS

The Guaranty building will be equipped with a combination perimeter and interior air distribution zoning system utilizing chilled water as a cooling medium. Cooling equipment will include two Chrysler Airtemp 125-hp. packaged water chillers and 231 individual remote units. Sept. 1 has been set as completion date for the installation.

Built in 1923, the nine-story building houses a number of first-floor merchandising establishments, a large basement cafeteria, and eight floors of offices.

Cooled or to be cooled in addition to the Guaranty building are the 15-story Consolidated building, the 10-story Architects and Builders building, the 10-story Illinois building, and the 14-floor Circle Tower.

The five will become the first completely air conditioned office buildings in downtown Indianapolis, it was claimed. All will use central systems providing year-round air conditioning.

SIZABLE OUTLAY

A spokesman for Klein & Kuhn commented: "The air conditioning of these major office buildings involves a sizable financial outlay. However, our firm and the owners we represent view the installation of the equipment as a long-term investment.

"Air conditioning will be a substantial added service to present tenants, will definitely attract new tenants, and should reduce the cost of building maintenance. We feel the value of these benefits over a period of years will outweigh the initial expenditure."

Guaranty building subcontractors include Indiana Tempered Air, Inc., ventilation and refrigeration cycle; T. W. Woelfing Co., plumbing; Sanborn Electric Co., electrical.

Hudson Bay Appoints 2 Sales Engineering Agents In the East

CHICAGO—Hudson Bay Div. of Refrigeration Systems, Inc., producer of sub-zero processing and environmental test cabinets and rooms, has announced the appointment of two new sales engineering agents in the east.

A. V. Peterson & Associates of Westport, Conn. has been assigned lower New York state, northern New Jersey, and western Connecticut.

Retake Corp. of Tonawanda, N. Y. will serve industrial accounts in upstate New York.

Plan Conditioned Dorms

DALLAS, Texas — Plans for two new air conditioned dormitories at Southern Methodist university were announced recently by the university.

Southern Furniture Exposition Bldg. To Be Completely Air Conditioned

SYRACUSE, N. Y.—A step-by-step program for the complete air conditioning of the Southern Furniture Exposition building, High Point, N. C., was announced jointly by the building management and by Carrier Corp.

In excess of 55% of the building's total area of about ½ million square feet of exhibit rental space was to have been conditioned by the time the Southern Furniture and Rug Market opened for its summer session on July 11, according to Charles V. Fenn, vice president of Carrier's Machinery & Systems Div.

The installation, totalling well over 400 tons of capacity, was completed in record time of about six weeks. It is anticipated that the remainder will be equipped during the interim period between the next several markets.

The entire air conditioning job is being done with "Carrier Self-Contained Weathermaker" packaged air conditioning units, permitting installation on an area by area basis, Fenn said. The initial installation involved more than 100 of these units ranging from 2 to 15 tons capacity.

The building has also constructed a new completely air conditioned cafeteria for the convenience of exhibitors and visitors.

All of the packaged units currently installed are water-cooled, and all of them use a single cooling tower located on the tenth floor roof for water recirculation, according to the spokesman.

"In a unique arrangement especially designed for this type of installation, six condenser water supply and drain risers have been run vertically through the building to the roof-top cooling tower," it was pointed out.

"The individual packaged units are connected to these risers.

"In addition, electricity to operate the air conditioners is supplied through power risers located alongside the water risers."

The Southern Furniture Exposition building consists of adjacent 10 and 14-story structures.

Air Conditioning Corp. of Greensboro is installing the equipment.

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FASTEST RATE OF HEAT TRANSFER

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COMPLETELY ACCESSIBLE FOR SERVICING

New external sump box contains water treatment basket, removable sediment screen and automatic waste, drain and overflow, all reached by simply lifting the sump cover.

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Acme's centrifugal blowers (not fans) are quiet and efficient in any indoor or outdoor location — have ample capacity for use with ductwork. You get "performance as rated" — and better!

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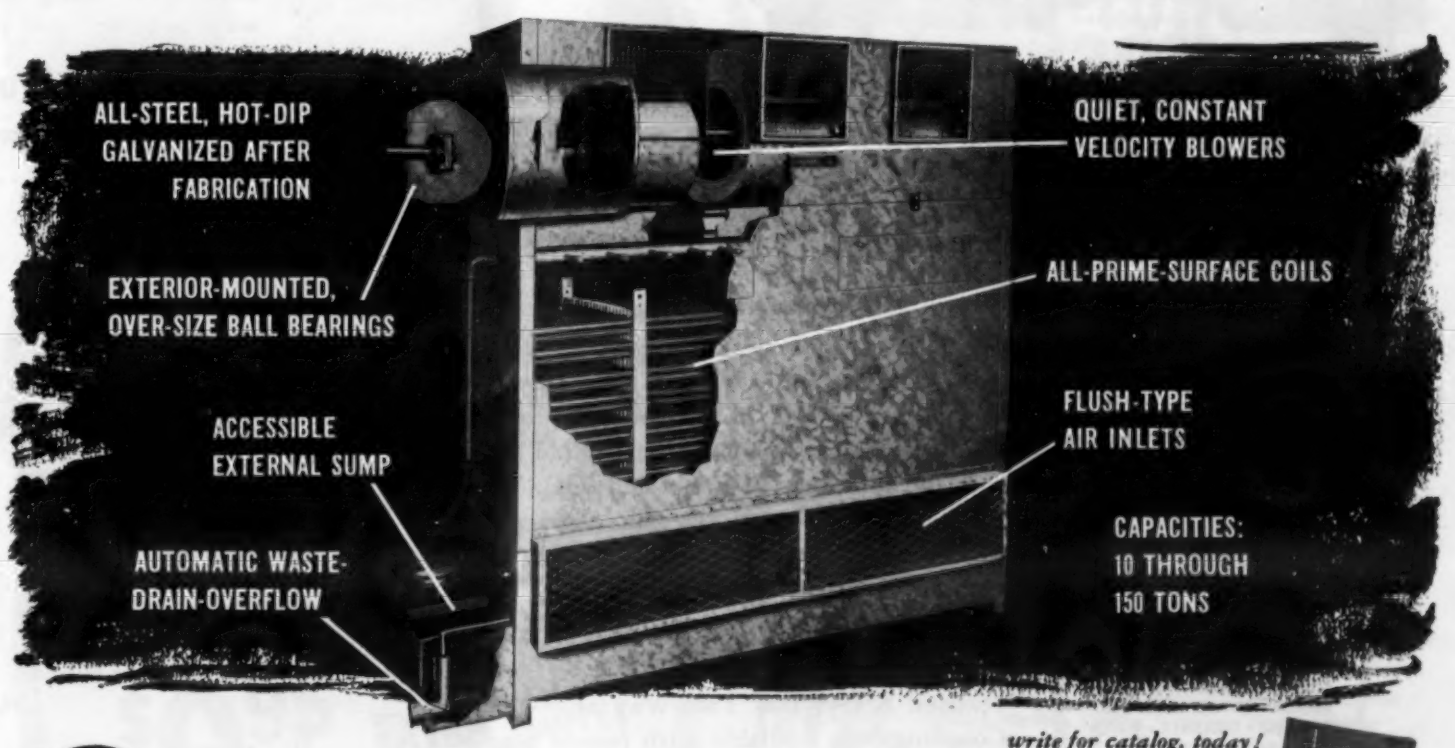

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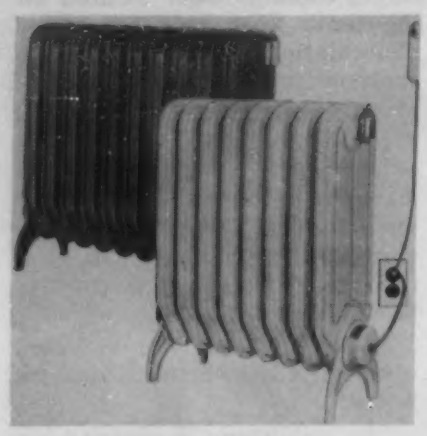

——KEY NO. E-830——

PARIS, Ky. — Portable, plug-in electric steam radiators, constructed so as to be light enough to be carried from room-to-room, are being offered by the Electric Steam Radiator Corp., which is located here.

These lightweight all-steel radiators, called "Electresteem," provide safe steam heat from any wall plug. Available in either 8 or 10-section models, they heat by a combination of convection and radiation and distribute abundant, uniform, healthful steam heat to all parts of the room. Models are available in either walnut or ivory finish.

When used with a portable plug-in thermostat, the Electresteem radiator provides automatic heating. Electresteem radiators operate for about 2 cents per hour in most areas of the country and will run for about 200 heating hours without attention. No draining is required when stored in freezing temperature.

'Zeo-Kit' Measures Hardness of Softened Water

——KEY NO. E-831——

PITTSBURGH — The hardness of water delivered by home or industrial water softeners can now be measured to the nearest 0.2 grain per gallon in an on-the-spot test that takes only one minute, according to Calgon, Inc. here.

A new pocket-size "Zeo-Kit" announced by the company is said to enable quick determination of when the softeners need regenerating.

Contained in a white plastic box that measures 4⅜ by 1¾ by 1 in., the 3-oz. kit consists of a glass vial and a dropper bottle holding 1 oz. of softener reagent. The 1 oz. of reagent is sufficient to make 140 tests on water averaging 0.5 grain per gallon, it was stated.

When the reagent is added, the water sample turns first red and then blue, the number of drops of reagent needed to turn the sample blue determines the hardness of the water.

Vending Rack Handles 'Steinie' Bottles

——KEY NO. E-832——

PHILADELPHIA—A new vending rack has been designed by General Vending Machine Corp. here to handle "steinie" bottles.

Heretofore, the various "rack-type" venders on the market (which have bottles hanging from a slatted metal rack) have been dimensioned to dispense "standard" 12-oz. bottles up to about 2⅝ in. maximum bottle diameter.

"The 'steinie' bottle is 2¾ in. or more in diameter and causes interference between rows of these bottles in the standard vending rack," the firm said.

"General Vending has now developed a special rack and delivery to accommodate 'steinies.' Independent bottlers who use this stubby-type bottle are now able to vend them in 'General' machines."

"Steinies" can be vended in both the "Bevmart" (5 flavor) and "Vendmor" (10 flavor) models.

Twin Coil Provides Cooling for Homes

——KEY NO. E-833——

DAYTON — Chrysler Airtemp has introduced a new twin coil for use with the company's counter-flow furnaces, gas or oil fired.

The compact coil is installed below the furnace. It provides summer cooling for the entire house, with air distributed through regular heating ducts, Airtemp said.

A matching case, same width and depth as the furnace, carries the coil. If desired, the case may be installed with the furnace and the coil added later, without duct-work modification of any kind.

Coils are mounted in parallel in vertical position; 12 tubes to row, three rows each, 13 aluminum fins per inch.

Filtrine
"Taste Master" PURIFIERS for
WATER - COOLERS ICE MAKERS

Stop
... rust, dirt chlorine taste
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Insures service satisfaction for all coolers, ice-makers! Clear, taste-free water ... crystal ice ...every day ... in all locations.

FILTRINE MFG COMPANY
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"My Typhoon District Manager is always Johnny-on-the-spot," says Don Kissell (left), Typhoon Los Angeles dealer.

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• COMMERCIAL AIR CONDITIONERS, 2 TO 25 TONS
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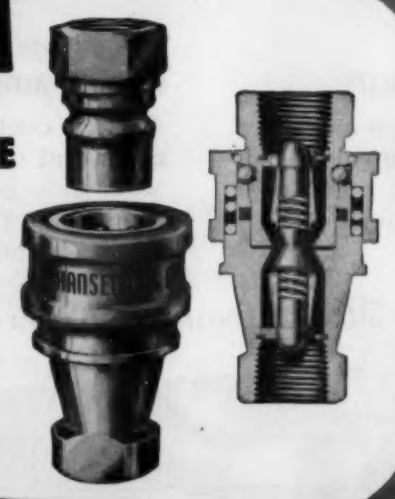
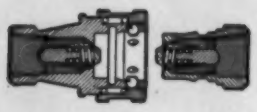


QUICK CONNECTION AND DISCONNECTION
INSTANT AUTOMATIC FLOW OR SHUT-OFF



Seals Both Ends of Line
AUTOMATICALLY INSTANTANEOUSLY

To connect a Hansen Two-Way Shut-Off Coupling, you just pull back the sleeve and push the Plug into the Socket. To disconnect, merely pull back sleeve. No tools required. Similar valves in Socket and Plug shut off both ends of line when Coupling is disconnected—practically eliminate spilling of liquid or escape of gas at instant of disconnection.

Quick Connective Fluid Line Couplings for
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HOSE CLAMPS • HOSE CLAMP PLUGS • HOSE CLAMP SOCKETS HOSE CLAMP COUPLINGS • AIR LIQUID SPRAY GUNS • AIR BLOW GUNS • SAND BLAST CLEANERS ENGINE CLEANERS

FEMALE PIPE THREAD CONNECTIONS FROM ⅛" TO 1"

Hansen Series HK Two-Way Shut-Off Couplings are available with female pipe thread connections from ⅛" to 1" inclusive. Available in brass or steel.

Also Straight-Through and One-Way Shut-Off Couplings. Write for Catalog.

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For more information about products advertised on this page use Information Center, page 20.

Charg-A-Cans Available For Auto Conditioners

——KEY NO. E-834——

LOS ANGELES — Anticipating a continued upswing in refrigeration units for cars, the Aerosol & Refrigeration Div. of American Potash & Chemical Corp. has put into production a line of packaged refrigerants for use in automobiles.

George Schnier, sales manager for the division, reported that the company's 1-lb. disposable "Charg-A-Cans" containing "Freon-12" are being nationally distributed through refrigeration wholesalers and through certain automotive equipment companies.

He pointed out that Novi Equipment Co. is producing an automobile air conditioning kit containing four of the "Freon-12" containers.

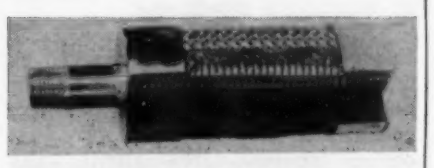
Majestic Dispenser Requires No Hose

——KEY NO. E-835——

LOS ANGELES—A new refrigerated juice dispenser equipped with an electro-magnet pump to eliminate the use of hoses has been announced by Majestic Enterprises, Ltd. here.

The new model, which will be available for delivery by Oct. 15, has a 6½-gal. transparent and removable bowl. The beverage is fluently sprayed to the top of the dome and showers down the side of the bowl, eliminating rings or pulp accumulation, the company said. The dome is available with or without illumination.

Housed in a stainless steel and polished chrome cabinet, the dispenser is equipped with a ⅛-hp. compressor.



New Unit Eliminates Water Hammer

——KEY NO. E-836——

PORT JERVIS, N. Y.—Techniflex Corp. has announced the release of its newly designed water hammer eliminator for domestic and small commercial piping.

Units are currently available with ½-in. and ¾-in. male I.P.T. connections.

The unit is made of brass and bronze components and provided with an outer bronze braid cover.

Raytheon Introduces Electrostatic Air Cleaner

——KEY NO. E-837——

WALTHAM, Mass.—One answer to the problem of smoke removal and of ridding the air of dust, pollen, soot, and other impurities is offered by the new "Micronaire" electrostatic air cleaner, manufactured by Raytheon Mfg. Co.

Micronaire unit works on the principle of static electricity. Because of this, and because it does not depend upon mechanical filtration, the machine is claimed to catch particles as small as 1/250,000 of an inch in diameter.

"The air cleaner uses the same amount of current as a 40-watt electric light bulb. Mounted on casters, it can be wheeled from room to room, and plugged into any electrical outlet."

Air is drawn in at the bottom and is blown by a fan over a series of closely-spaced aluminum plates. Every other plate is charged with static electricity. The plates act as "magnets," trapping all the airborne particles.

Murphy & Miller Offers Improved Air Driers

——KEY NO. E-838——

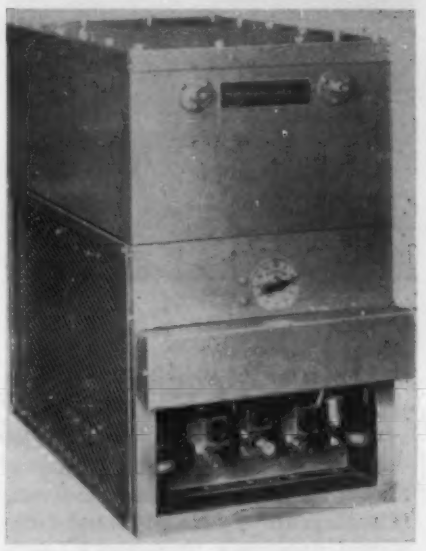
CHICAGO — An enlarged and improved line of self-contained mechanically refrigerated air driers was recently announced by Murphy & Miller, Inc. here.

Comprised of five models of ¼, ¾, 1½, 3, and 5 hp., the new line of air driers is completely automatic and requires no attention or manual reactivation because the drying process is accomplished mechanically and automatic cycling controls are provided.

Murphy & Miller air driers remove moisture by a process of condensation. The condensation process removes entrapped oil and provides a relatively pure and dry air output, the company explained.

Manual reactivation is eliminated by a dual, all-copper tube assembly, heater and automatic control which alternately defrosts each tank while the refrigeration system provides cooling for the tube previously defrosted.

Capacities of the five models are based on 80° F. entering air at 60 p.s.i. pressure. Output ranges from 4 to 55 c.f.m. Increased entering pressure will increase the drying capacity of the driers.



Driers are shipped ready for operation after connection.

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PORTABLE ELECTRIC STEAM RADIATORS

Electresteem is the perfect low-cost heater to supplement your reverse-cycle air conditioning installations. Lightweight, portable Electresteem heats by a combination of convection and radiant heat — distributes abundant, *uniform* steam heat wherever it's needed. Tie in and cash in with Electresteem for extra easy profits this fall and winter. Electresteem is available in 8 and 10-section models in handsome Ivory and Walnut. Send coupon below for full facts today.

8-section model $39.95 Retail

10-section, $44.95

Deluxe thermostat control, optional, $9.95

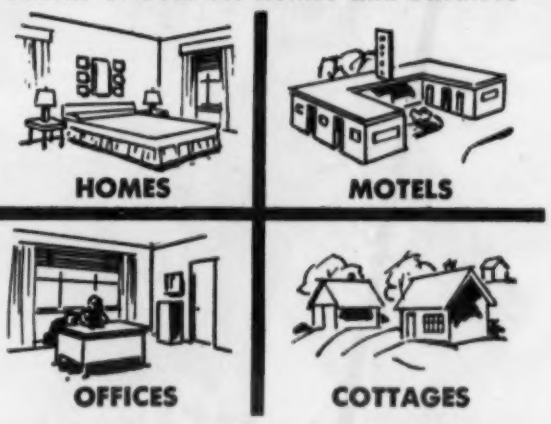
Automatic

Accurate Electresteem Thermostat Control makes any space heater fully automatic. Just plug it in, set it, forget it. No special wiring needed.

SAFE STEAM HEAT

FROM ANY WALL PLUG

Dozens of Uses for Homes and Business



Get in on this JACK FROST SPECIAL

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Buy 2 Electresteem radiators plus one Thermostat Control (either model, either color)

Get Free 1 Thermostat Control A fast-selling item that makes any space heater completely automatic. Retails at $9.95

See your Electresteem Representative. Offer expires August 31st for wholesalers. October 15 for contractors.

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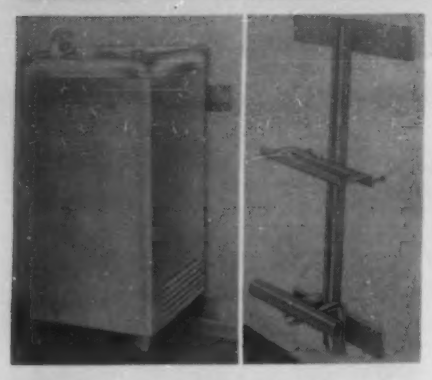


Water Cooler Rack Allows Cleaning Space

——KEY NO. E-839——

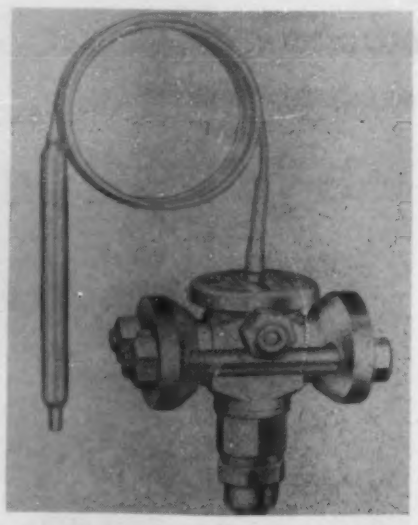
NEW YORK CITY—Cordley & Hayes has announced a new "Cordleyrac" wall bracket designed expressly to support Cordley water coolers off the floor.

Made of heavy-gauge steel, the holder will be of most interest to schools, hospitals, and other places where cleanliness is vital," Cordley indicated.

"Suspension of a cooler above the floor provides ample clearance space for floor cleaning equipment beneath the cooler. Crevices where dirt and germs might accumulate are eliminated."

Cordleyrac can be raised to any desired height, providing a more comfortable and convenient drinking level for floor coolers.

Four bolts or screws hold the bracket securely to the wall. Two tension bolts in an adjustable crossbar provide additional stabilization. Cordleyrac may be attached to cement or plaster walls with expansion bolts, or directly to the studding of plaster walls.



General Produces New Sensitive Thermo Valves

——KEY NO. E-8310——

GLENDALE, Calif. — A new series of thermostatic expansion valves for use on industrial and commercial refrigeration and air conditioning equipment, which feature high sensitivity and flange-type, tongue and groove connectors, is now being produced by General Controls Co.

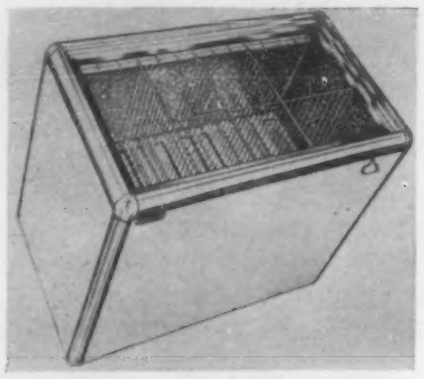
The new valves, cataloged as the V-202 and V-203, respond to very small changes in superheat and provide smooth control on the most difficult applications, the company claims. Their high sensitivity is a result of the valve's packless construction and low-friction, stainless steel push pins, a feature that allows exceptionally good superheat control, it explained.

The flange-type connectors provide a non-loosening, frostproof connection that is easily removable. They are manufactured in ⅜-in., ½-in., and ⅝-in. inlet tube sizes, and in ⅝-in., ⅞-in., and 1⅛-in. outlet tube sizes.

A wide range of capacities is available. These include 2.5, 3.5, and 6.5 tons in "Freon-12"/"Genetron-12," and 3.5, 5.5, and 10.5 tons in "Freon-22"/"Genetron-141." Standard models have an internal/external equalizer and adjustable superheat with ¼-in. SAE flare. The external equalizer only with ¼-in. ODS connection is optional.

General Controls' V-202 model valve uses a semi-liquid charge that permits mounting the unit in any position and in any ambient temperature.

The V-203 model is gas charged and of a type widely employed in air conditioning systems. A 60-in. capillary tube is provided on all valves to facilitate installation.



Dry Cooler Holds 570 Half Pints of Milk

——KEY NO. E-8311——

ST. LOUIS—A dry cooler with a storage capacity of 570 half pints, designed to handle extra volume created by the Federal school milk program, is now being supplied by the Bevco Co., according to Sam Dorman, president.

Dorman said the cooler, model C-15, requires only 28 in. by 48 in. in floor space, yet holds 570 half pints of milk in its 19-in. deep, 9-cu. ft. storage compartment.

The C15 cooler, which meets all state sanitation requirements, will also store any glass, paper, or metal containers up to gallon sizes.

There are no coils or motors inside the cooling compartment, leaving the entire interior free and unobstructed for capacity storage. Grille dividers for separating the various sizes and types of containers is an optional accessory.

Bevco's model C15 is covered by a five-year warranty on the ¼-hp. sealed refrigeration unit. Standard replacement parts, obtainable anywhere, are used throughout.

Other features include baked enamel exterior, stainless steel sliding lids, Fiberglas and Temlock insulation, and adjustable temperature control.

Refrigerant Distributor Introduced by Alco

——KEY NO. E-8312——

ST. LOUIS—A new venturi-type refrigerant distributor, designed to solve a number of problems connected with multi-circuit evaporators, was recently introduced by the Alco Valve Co. here.

The new distributor, called the Alco "Venturi-Flo," assures equal flow of refrigerant to all passes of multi-circuit systems, the company says.

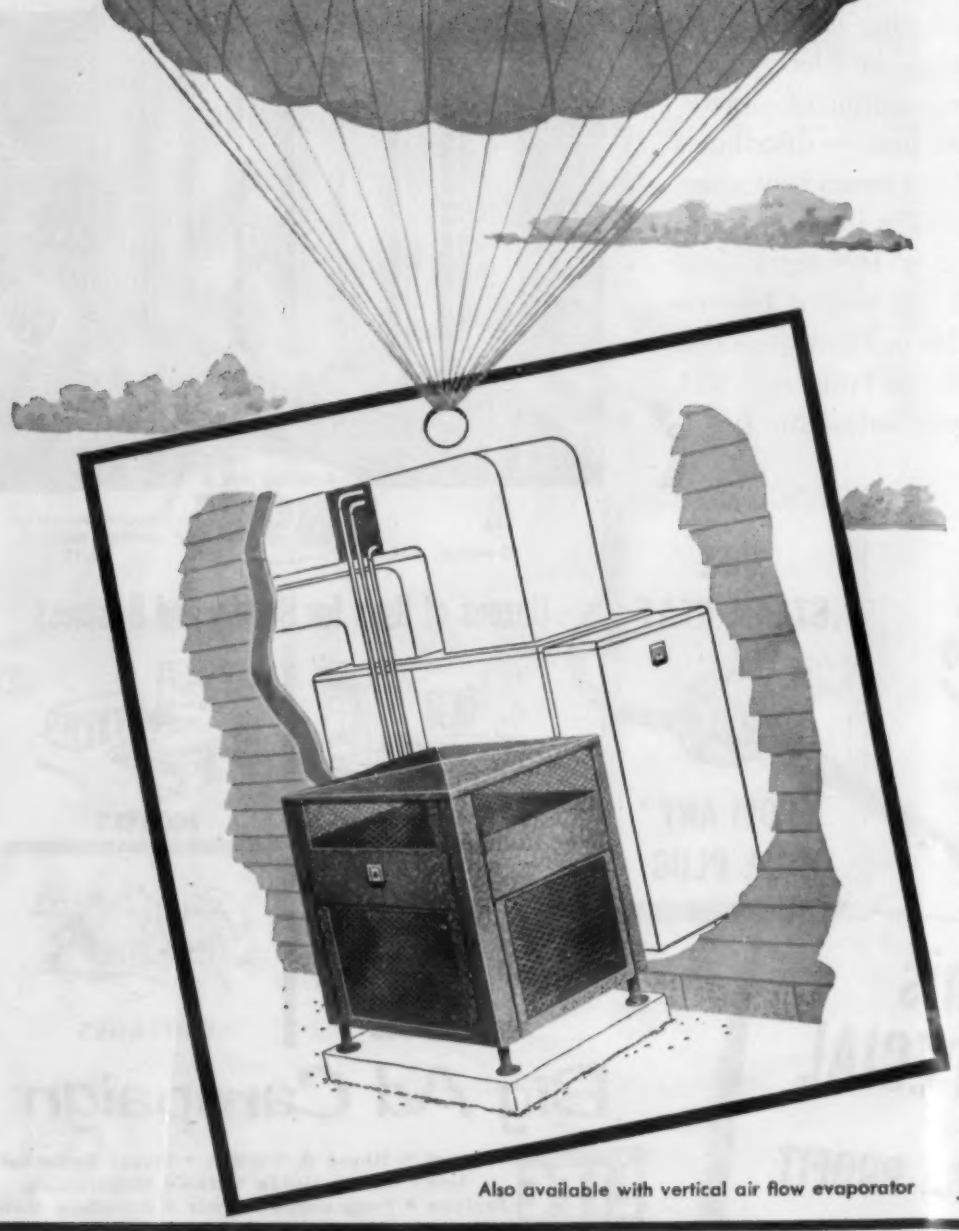
The new Alco Venturi-Flo distributor is designed to work equally well in any position: vertical, upside-down, or horizontal. Of one-piece construction, it does not rely on nozzles for capacity regulation.

The Venturi-Flo is engineered for application from 25% of capacity to 150% of rated capacity, with only a small pressure drop at maximum conditions.

The low-pressure drop makes it easier to choose thermo valves of the right capacity for multi-circuit installations, allowing substantial economies from closer, more accurate thermo-valve sizing, the company claims.

Suddenly...

New Air Conditioning Customers for You!



How many people are there in your neighborhood who've been *wanting* air conditioning but have held back because of high water rates or water restrictions?

Every one of those people is now—suddenly—an excellent prospect for an air conditioning installation. The new outdoor air-cooled unit made by the Air Conditioning Division of American-Standard requires no water whatsoever—uses only electricity and air. And it provides fully automatic control of temperature and humidity.

What's more, this unit combines economically with the home owner's new or existing heating system . . . enables you to offer year 'round comfort at a *competitive price.*

New Outdoor
AIR-COOLED UNIT
by
AMERICAN-Standard
Requires No Water
Uses No Floor Space

Available in 2 hp and 3 hp sizes, the new American-Standard air-cooled condensing unit is designed to cool the entire house. As shown here, in a typical installation, it ties in with an evaporator unit in the furnace ductwork, and only a few connections are needed. Besides doing away with water and saving indoor floor space, this outdoor system has another advantage—it keeps all mechanical operating parts outside the house for *quiet* comfort inside. Cooling unit is covered by 5-Year Protection Plan.

NEW! *Cooling Sales Aids for dealers—a complete promotional package designed to help you locate prospects quickly and close orders fast. Ask your American-Standard Air Conditioning distributor for full details.*

Also available with vertical air flow evaporator

EVERYTHING *for air conditioned comfort*

Warm Air Heating
Summer Cooling
Year 'round Units
Electrostatic Air Filters

AMERICAN-Standard
AIR CONDITIONING DIVISION
ELYRIA, OHIO
American Radiator & Standard Sanitary Corporation

Photo Shop Solves Space Problem With Built-in Evaporative Condenser

ATLANTA—Installation of a self-contained air conditioner with built-in evaporative condenser in Wing's Foto Shop on the ground floor of the 10-story Grant building in downtown Atlanta was Desco Mechanical Contractors' solution to the problem of lack of space for a cooling tower or air-cooled condenser.

A report on the installation was provided by L. K. "Jack" Altman, Altman Co., Bal-Air, Inc. representative.

SPACE PROBLEM

"One of the oldest air conditioning problems in downtown Atlanta has always been the lack of space for cooling towers or air-cooled condensers," Altman pointed out.

"Besides not having available space for towers, it has been impractical to run tower water lines from the lower floors to the roof of a 10 or 15-story building. The cost of wasting city water has also been prohibitive.

"As a result, many stores and offices in the downtown multistory buildings have been unable to enjoy the comfort and business advantages of air conditioning."

Desco Mechanical Contractors solved this problem, in the case of Wing's Foto Shop, by installing a 5-ton self-contained Bal-Air air conditioner, according to Altman.

"This air conditioner has its own built-in evaporative condenser and water pump, which of course provided an efficient water-cooled air conditioning system, but without requiring any additional space for tower or air-cooled condenser.

"The complete installation of the unit required only a small make-up water line, from the nearest water supply, and a small drain for overflow, electrical connection at the outside of the unit, and enough duct from the evaporative condenser to get through a window immediately behind and above the unit.

"Wing's Foto Shop reports that many of their customers have shown definite interest in the installation as being practical for their own location."

Altman noted that these air conditioners are available either in the store type of central-station type and in capacities ranging from 2 through 60 tons.

Air Conditioning Firm Formed In Pennsylvania

DREXEL HILL, Pa. — L. J. Alyan Co. has been formed here as a distributor and manufacturers' representative for air conditioning, heating, and ventilating equipment.

Located at 459 Burmont Rd., the firm covers an area of eastern Pennsylvania, south Jersey, and Delaware. It has personnel with over 15 years' experience in both engineering and field installations, according to Leon J. Alyanakian, manager.

Safeway Supermarkets Sign Contract for Drayer-Hanson Air Conditioning Systems

LOS ANGELES — Drayer-Hanson, Inc. has recently secured contracts for air conditioning equipment for two new Safeway stores in Santa Barbara and National City, Calif., Fred E. Schmuck, national sales manager, has announced.

The recently dedicated Reseda store, he said, is cooled by five pieces of Drayer-Hanson equipment.

An "HH-226" unit, ceiling suspended in the grocery receiving area, distributes conditioned air to the main customer shopping areas and executive offices on the mezzanine through air supply ducts to the attic.

Return air, pulled through soffits in the storage area, is sent back to the HH unit for reuse, after mixing with fresh air. The equipment is designed to maintain 78° F. indoor temperature and is rated at 22,000 c.f.m.

Two Payne duct furnaces, suspended alongside the Drayer-Hanson unit, will supply heat. Controls will give two-stage cooling and one-stage heating.

Two "HH-114" units will cool the meat preparation and packaging areas and the produce section. Both are ceiling suspended. In the mezzanine in the machinery room are a 50-ton and a 40-ton Drayer-Hanson "Perma-Fan" evaporative condenser to serve as closed circuit cooling towers. Piping to the water tower automatically allows for a shift to city water supply sources in case of emergencies.

Airtemp Develops New Trailer, TV Ad Series

DAYTON—Development of a new series of movie trailers and television commercials for Chrysler Airtemp distributors and dealers has been announced by E. A. Nash, Airtemp merchandising manager.

Now available for use throughout the country, Airtemp's new series consists of: ten 26-second movie trailers and 14 TV commercial films on residential air conditioning and heating; four movie trailers and four TV commercials on packaged air conditioners; three movie trailers and 12 TV commercials on room air conditioners.

All the movie trailer films are of 26-second duration and in full color. TV commercials, one minute or 20 seconds, are in black and white. Each film dramatizes a special product feature or user benefit and, when shown, will carry at the end a personalized sales message of the sponsoring Airtemp affiliate.

"These new professionally prepared films are being supplied free to Airtemp accounts," states Nash. "In addition, under the terms of the company's cooperative advertising plan, we will share in the theater or station charges for their showing.

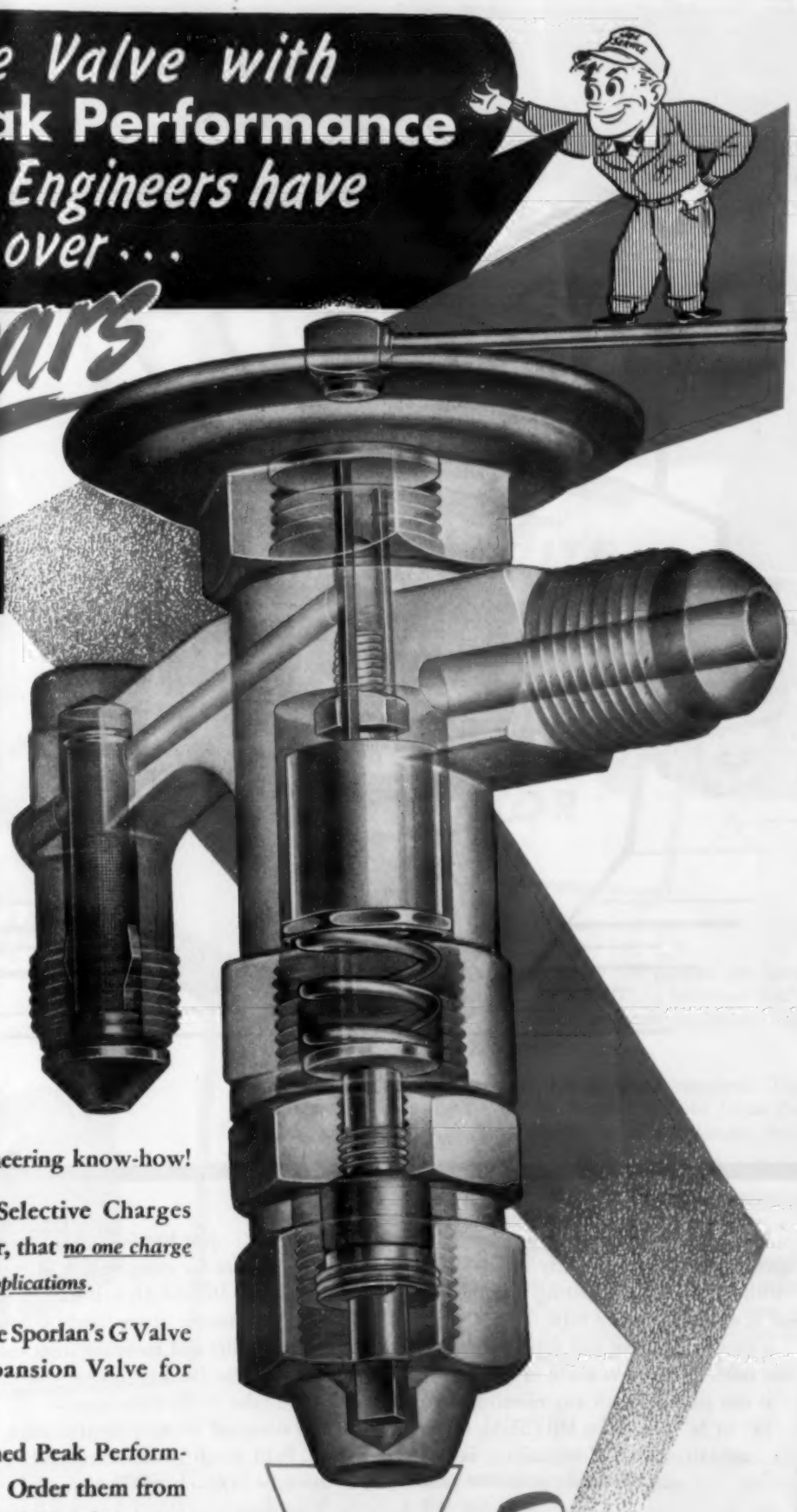
"This is the first time we have made available to Airtemp distributors and dealers such an extensive, interesting series of action commercials. I might add such a 'star studded' series, for the room air conditioner films feature Peggy Ann Garner, Mr. and Mrs. Arthur Murray, and golfer Sam Snead, all well known personalities."

Here's the Valve with
Planned Peak Performance
that Service Engineers have relied on for over . . .

21 years

The
SPORLAN
G VALVE
WITH SELECTIVE CHARGES

C CHARGE
for Suction Temperatures above Zero
Z CHARGE
for Suction Temperatures below Zero
X CHARGE
for Extremely Low Temperatures



• • • and the reasons for Sporlan's great reliability are *two-fold.*

There has been just one Sporlan design, never changed, but constantly improved by 21 years of engineering know-how!

And Sporlan has *always* offered Selective Charges which keep on proving, year after year, that *no one charge* can properly operate a valve on *all applications.*

No wonder Service Engineers vote Sporlan's G Valve the number one Thermostatic Expansion Valve for commercial refrigeration!

You, too, can rely on Sporlan's Planned Peak Performance G Valves with Selective Charges. Order them from your wholesaler today, and be sure to ask him for a new Sporlan Catalog, showing the proper Solenoid Valves and Catch-Alls to go with them.

Remember . . . Buy Sporlan Right-Down-The-Line and get Peak Performance throughout!

SPORLAN Valve Co.
7525 SUSSEX AVENUE ST. LOUIS 17, MO.
EXPORT DEPARTMENT 89 BROAD STREET NEW YORK 4, NEW YORK

May Refrigerator Sales by NEMA Firms Rose 38%

NEW YORK CITY—A 38% increase in May sales of household refrigerators over the same month last year was reported by 15 manufacturers to the National Electrical Manufacturers Association.

The 390,385 units sold by these companies was the second highest total for any of the first five months of this year and topped any month of last year. Their sales for the first five months were 18% greater than in the same 1954 period.

Refrigerator sales within the United States for May topped last year by 40%.

As compared with April, 1955, total sales were up 7%. Sales within the United States rose 8%.

For the first five months, sales within the United States were 19% higher than they were last year.

Summary for May and First Five Months, 1955
Complete Electric Household Refrigerators Only

May (15 Companies)

Sizes	Domestic (48 States and D. C.)	Canadian	Other Foreign	Total
1. 3 cu. ft. (3.4 & under)..	....	....	....	....
2. 4 cu. ft. (3.5 to 4.4)....	1,674	....	1	1,675
3. 5 cu. ft. (4.5 to 5.4)....	34	21	5	60
4. 6 cu. ft. (5.5 to 6.4)....	3,066	....	4	3,070
5. 7 cu. ft. (6.5 to 7.4)....	15,513	772	2,617	18,902
6. 8 cu. ft. (7.5 to 8.4)....	78,208	742	11,166	90,116
7. 9 cu. ft. (8.5 to 9.4)....	37,809	1,707	3,669	43,185
8. 10 cu. ft. (9.5 to 10.4)..	67,747	3,664	2,175	73,586
9. 11 cu. ft. (10.5 to 11.4).	63,767	797	5,150	69,714
10. 12 cu. ft. (11.5 & over).	87,019	858	2,200	90,077
11. Total	**354,837**	**8,561**	**26,987**	**390,385**
Refrigerators Having Two Exterior Doors (All Sizes Included In Above).....	**60,785**	**779**	**1,591**	**63,155**

First Five Months (15 Companies)

Sizes	Domestic (48 States and D. C.)	Canadian	Other Foreign	Total
1. 3 cu. ft. (3.4 & under)..	....	....	....	....
2. 4 cu. ft. (3.5 to 4.4)....	7,526	....	356	7,882
3. 5 cu. ft. (4.5 to 5.4)....	210	32	54	296
4. 6 cu. ft. (5.5 to 6.4)....	9,204	1	2,303	11,508
5. 7 cu. ft. (6.5 to 7.4)....	53,228	3,027	8,166	64,421
6. 8 cu. ft. (7.5 to 8.4)....	364,349	1,536	48,468	414,353
7. 9 cu. ft. (8.5 to 9.4)....	175,165	4,996	13,978	194,139
8. 10 cu. ft. (9.5 to 10.4)..	286,452	8,640	13,024	308,116
9. 11 cu. ft. (10.5 to 11.4).	341,495	4,898	18,521	364,914
10. 12 cu. ft. (11.5 & over).	485,275	5,098	11,227	501,600
11. Total	**1,722,904**	**28,228**	**116,097**	**1,867,229**
Refrigerators Having Two Exterior Doors (All Sizes Included In Above).....	**312,119**	**3,627**	**8,085**	**323,831**

Participating companies: Admiral Corp.; Crosley & Bendix Home Appliances Div., Avco Mfg. Corp.; Deepfreeze Appliance Div., Motor Products Corp.; Frigidaire Div., General Motors Corp.; General Electric Co.; Gibson Refrigerator Co.; Hotpoint Co., Div. of General Electric Co.; International Harvester Co.; Kelvinator Div., American Motors Corp.; Norge Div., Borg-Warner Corp.; Philco Corp., Appliance Div.; Quicfrez, Inc.; Seeger Refrigerator Co.; Servel, Inc.; Westinghouse Electric Corp.

Frigidaire Opens Distribution Center In New Orleans

NEW ORLEANS—A new headquarters and distribution center has been opened by the New Orleans Branch of the Frigidaire Sales Corp., at 4141 Bienville St.

F. B. Hartney, branch manager, said that the new distribution center will serve Frigidaire dealers in Louisiana, the southern half of Mississippi, and parts of Alabama and Florida.

The new building, a modern brick, concrete, and glass structure, has a total floor area of 60,500 sq. ft. of warehouse space, 22,000 sq. ft. of general office space, and 4,500 sq. ft. for service parts and accessories.

Westinghouse Names Sheetz to New Post

MANSFIELD, Ohio—Appointment of R. S. Sheetz as assistant to the manager of major appliances was announced here recently by R. J. Sargent, manager of major appliances for the Westinghouse Electric Appliance Div.

Sheetz joined Westinghouse in 1946 after graduation from Bucknell university with a degree in electrical engineering. In 1947 he was assigned to the Lamp Div. and subsequently served in various capacities in the engineering and sales department.

In 1953 he was appointed manager, "Sterilamp-Odorout" sales, a position he held until he was named to attend the Westinghouse Middle Management Training Program at Harvard Business School. He received his master's degree in business administration from the program in June of this year and returns to the corporation in his new capacity.

2 Charged with Violating Neb. Auction Law

LINCOLN, Neb.—An Omaha merchant and a Lincoln auctioneer are the first persons to be charged with violation of LB 498, a law passed in the 1955 session of the State Legislature to regulate sales of new appliances at public auction.

The law requires persons, who plan to hold an auction of new merchandise in a county where they do not have a regular place of business, to secure a permit at a cost of $50 per day. Posting of surety bond also is required.

Charged in Lancaster County Court here with violating the law were L. L. Blauvelt, Lincoln auctioneer who handles sales at 1721 W. "O" St., and Charles C. Gannett of Omaha, who allegedly owned the merchandise auctioned.

Both men were charged with selling and offering for sale new goods on June 17 without having secured a license. Innocent pleas were entered for both men by power of attorney.

You need no tools when you bend dead-soft DRYSEAL . . . just hands . . . while the special temper and ductility of DRYSEAL make it easy to flare for compression fittings without danger of splitting. Another thing you'll like about DRYSEAL is the double-crimp seal at each end of the tube. This is the final step in manufacturing, immediately following a special cleaning and dehydrating operation. This keeps dirt and moisture from entering the tube. The seal is made in such a way as not to change the diameter of the tube so that it can pass through any opening large enough for the tube itself. Tube sizes— ⅛" to ¾" O.D. The DRYSEAL carton, attractively designed for easy identification, contains one 50-foot coil . . . is easier to handle, light weight, economical and sturdily made to assure protection of the tube in stock and in transit.

REVERE
COPPER AND BRASS INCORPORATED
Founded by Paul Revere in 1801
230 Park Avenue, New York 17, N. Y.
• • •
Mills: Baltimore, Md.; Brooklyn, N. Y.; Chicago, Clinton and Joliet, Ill.; Detroit, Mich.; Los Angeles and Riverside, Calif.; New Bedford, Mass.; Newport, Ark.; Rome, N. Y.
Sales Offices in Principal Cities, Distributors Everywhere.

For more information about products advertised on this page use Information Center, page 20.

N. Y. Judge's Ruling Supports Sani-Shake In Licensing Case

BUFFALO — Supreme Court Justice Carlton A. Fisher held recently that the manufacturer of the Sani-Shake machine used to make milk shakes need not get a license to sell the product of the machine.

The State Department of Agriculture & Markets had charged that the machine product can be made to resemble ice cream, except for butter fat content, and therefore should be subject to a state license.

Justice Fisher descended to the basement of County Hall several weeks ago to witness the machine operation. It is a product of the General Equipment Mfg. Co., Inc. of Indianapolis, and Edward J. Frutchey of 100 Niagara St. is the local distributor.

The corporation and Frutchey maintained that there are no specifications prescribed by law for the manufacture of milk shakes and that state law does not prohibit the manufacture and sale of milk shakes made in the Sani-Shake machine, provided they are made with a mixture of ice cream mix and whole milk stirred together in a liquid state. Justice Fisher said:

"It is true that a commercial ice cream freezer is built on about the same plan. The legislature has not seen fit to define or regulate the contents of a milk shake as they have to define imitation ice cream, ice cream, and frozen deserts.

"The department (Agriculture & Markets) has known about this machine during a period of time in which the legislature has been in session twice. They have not seen fit to recommend legislation defining the contents of a milk shake. . . ."

Attorney Robert J. Lansdowne, who represented the manufacturer, said the company makes uniform milk shakes and that it would be impractical for purchasers to try to make ice cream with it because it was not designed for that purpose.

'Kinetic' Opens N. Y., Chicago Sales Offices

WILMINGTON, Del.—Establishment of its own independent New York and Chicago district sales offices was announced recently by the Du Pont Co.'s "Kinetic" Chemicals Div.

Charles Wirth III was named New York district manager, with Norman W. Kent as Chicago district manager.

The new offices, which will handle sales of "Freon" refrigerants, aerosol propellents, solvents, and fire extinguishing agents, will go into operation Sept. 1 and will be located in existing office quarters of the company's Organic Chemicals Dept., to which the "Kinetic" sales organization has previously been reporting.

West Coast sales of the "Freon" compounds will continue under the direct supervision of the Los Angeles district office of the company's Organic Chemicals Dept., with A. J. Mease as district manager and Samuel N. Seely as sales supervisor for "Kinetic."

SLANTS on Service

Make Dampers Oversize

Dampers for warm air zone control systems should be made 1 in. to 2 in. oversize on the vertical dimension, suggests Porter Higby of Minneapolis.

If the duct is 8 in. high, the damper should be 9 in. high. This will permit the damper to close off air delivery tightly without binding against the top and bottom of the duct, he says.

* * *

Where To Locate Cooling Thermostat

It is essential that the thermostat which controls compressor operation in a residential air conditioning system be located where it gets good air circulation but is not in drafts, cautions Minneapolis-Honeywell Regulator Co.

Honeywell offers these suggestions for locating the cooling thermostat:

1. Mount it on an inside wall about 4 ft. above the floor.
2. Make sure there is free circulation of air around the thermostat unobstructed by walls and furniture.
3. Keep the thermostat out of drafts.
4. Avoid locations where the thermostat can be affected by heat or cold from water pipes, ducts, radiant sun heat, lamps, or electrical appliances.

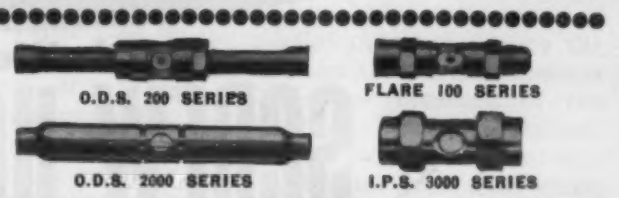
Johnston Opens Branch Store

MEMPHIS, Tenn. — Wallace Johnston Appliances, 760 Union St., has opened a branch store at 2268 Park as part of an expansion program.

Here's Advanced Design In LIQUID EYE®

1. Sales Appeal
2. Cost Reduction

A few of the styles in Allin's expanded line



1. **Add Sales Appeal** to your equipment by featuring the fact that Liquid Eye eliminates guesswork by offering your customer a visible means of quick, positive analysis of the refrigerant charge.

2. **Reduce Costs** by taking advantage of the wide variety of Liquid Eye sizes and styles to step up your assembly line output.

You'll find a Liquid Eye to perfectly fit your application. An Allin representative is ready to help you choose from a complete line.

Send for Allin Catalog D-55

Allin MANUFACTURING COMPANY
1153 W. Grand Ave., Chicago 22, Ill.

FULLY AUTOMATIC, delivers up to 100 gallons per hour of highly carbonated water . . . for a sparkling beverage that's a pleasure to serve and a double-pleasure to drink! Use with any type cooling system.

COMPACT, easy to handle! Little space required. The carbonating unit itself may be located remote from the pump-motor-relay, or is available as a completely self-contained assembly, as illustrated at left.

SAVES REAL MONEY, because of high-capacity operating efficiency, plus other cost-conserving features!

BIG ACTIVE MARKETS FOR YOU! Soda fountains, roadside stands and drive-ins, restaurants, bars and taverns, home recreation rooms and vending machines—represent a BIG market potential in both replacement and new installations of Bantam 100 carbonators.

Since 1929 Temprite PRODUCTS CORPORATION BIRMINGHAM, MICHIGAN

TEMPRITE PRODUCTS CORP.
P.O. Box 72-A
Birmingham, Michigan

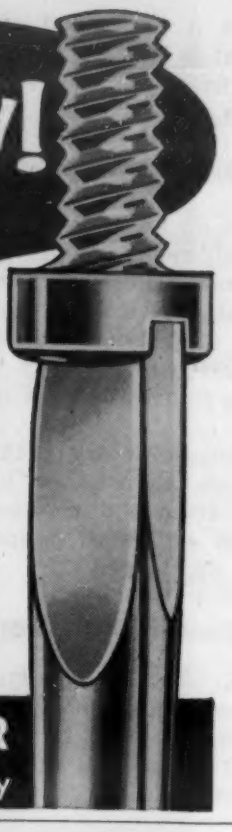
☐ Send me data on the Temprite "Bantam 100" Carbonator.
☐ Ask your representative to call.

Name_____
Address_____ Zone___
City_____ State____

Grips the screw!
Drives it too!

Quick-Wedge
SCREW-HOLDING
SCREWDRIVER

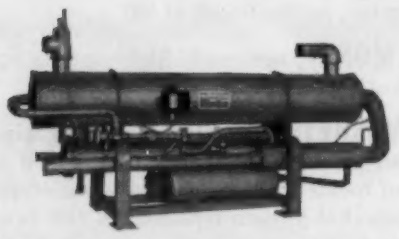
2" to 14" blades, 4 bit sizes
Available with shockproof
plastic covered tubing
Unconditionally guaranteed



ASK FOR IT AT YOUR DEALER
Kedman Co., 233 So. 5th W., Salt Lake City

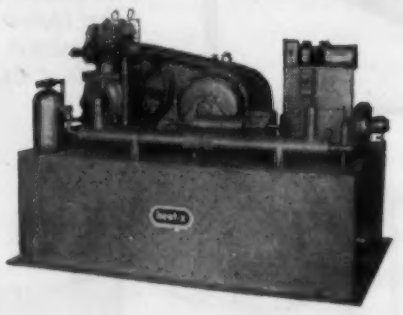
Heat-X 'PC' Units (above) provide the practical, space-saving answer to your water chilling needs . . . for air conditioning systems . . . drinking water or processing applications.

Inner-Fin construction of refrigerant passages, exclusive with Heat-X, permits a compactness impossible with old fashioned construction. Result: greater cooling capacity with far less bulk. Entirely self-contained, these *package* chillers are delivered completely wired, charged with Freon-12, ready to install. Only power and water connections are required. Available in 2 H.P. through 75 H.P. models.



'CCP' UNITS (right) are complete and ready to install, offer another method of packaged cooling. Combinations of cast aluminum coolers provide continuous chilled water, eliminate danger of freeze-up damage. Hermetic compressors carry 5 year warranty.

'PCL' UNITS (left) are designed for those who prefer a chiller to which they can tie in their own condensing unit and water pump. Construction is the same as the 'PC' line.



HEAT-X, Inc.
BREWSTER • NEW YORK

Refrigeration Problems And Their Solution

By Paul Reed

For Service and Installation Engineers

Frequently Used Technical Terms

Words are man's greatest tools. Their use can prove a blessing or a menace. Without them, man would be little more than an animal, and our civilization dates from the time when our ancient forebearers contrived the written word, so that his thoughts and his achievements could be preserved and accumulated for those who came after him.

To him who understands its meaning, one word alone can convey a whole string of thoughts. To the engineer, one word may identify an entire process, which would require pages of laborious explanation. Technical terms speed up and shorten an explanation.

But to take advantage of these mental short cuts, one must understand the meaning of the specialized, technical terms. It is therefore important to us to be familiar with the meaning of some of the more common technical terms used in our work.

This column will endeavor to group together some of the words and phrases that are frequently found in books, manuals, instruction pamphlets, and articles on refrigeration and air conditioning, and, we hope, explain their meaning as simply as possible and yet with reasonable accuracy.

We cannot hope to make this list anyway near complete. The terms included will be chosen largely at random, and no doubt many terms will be overlooked that could very well have been included.

First, let us take the word **Psychrometry**—The study of mixtures of air and water vapor, particularly of our atmosphere; also called **Hygrometry.** The chief tools of this science are:

1. The Psychrometer, or Hygrometer as it is also called. It consists of two thermometers mounted together and so arranged that they can be whirled in the air (a sling psychrometer) or placed where a draft of air passes over the bulbs of the two thermometers. One of these thermometers is the Dry-bulb Thermometer and the other the Wet-bulb Thermometer.

2. **Psychrometric Chart**—A diagram with curves showing the properties of air, dry or mixed with water vapor in various proportions at various temperatures.

Psychrometric Tables—The same information that can be taken from the Psychrometric Chart. Sometimes used instead of the Psychrometric Chart in calculations in which extreme accuracy is required.

All of the data for a study of the properties of air can be obtained by the use of the Psychrometer and the Psychrometric Chart or Tables.

3. **Dewpoint Indicator**—This consists of a highly polished plate, which can be cooled by some means. When cooled down to the Dewpoint Temperature a moisture film starts to condense on this polished plate. Not used extensively, for the Dewpoint Temperature can be ascertained from the Psychrometric Chart if the Dry and Wet-bulb Temperatures are known.

4. **Anemometer**—A fan-like device that is used to measure the velocity of the air in an airstream. **Manometers** (A "U" tube) with Pitot tubes are also used to measure air velocities.

Terms commonly used in psychrometry are:

Dry-bulb Temperature—The temperature read on a dry-bulb thermometer, is the ordinary temperature that we mean when we refer to the temperature of the air. The Dry-bulb Temperature is an indication of the Sensible Heat of the air and

(Continued on next page)

YOU
WILL APPRECIATE THE TECHNICAL SUPERIORITY OF PATENTED, EXCLUSIVE
SUPERCHARGER CARBONATORS
YOUR CUSTOMERS WILL APPRECIATE THE
• Higher carbonation • Peak capacity
• More troublefree operation • Space-saving compactness
IT'S EASIER, MORE PROFITABLE TO SELL THE FINEST
Jet foamescent Carbonators by Carbonic Dispenser, U. S. Patent No. 2,588,677.

MAIL THIS COUPON TODAY
For literature outlining the opportunity now open to make bigger profits selling Carbonic Dispenser Equipment.
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DISPENSER INC.
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West Coast Plant
1851 Randolph St., Los Angeles, Calif
IN CANADA: GENERAL EQUIPMENT CORP., LTD., TORONTO, ONT

For more information about products advertised on this page use Information Center, page 20.

Technical Terms--

(Continued from preceding page)

water vapor mixture. The Dry-bulb Temperature is also the indication of the volume of the mixture of dry air and moisture vapor.

Wet-bulb Temperature—The temperature as read on a Wet-bulb thermometer when whirled in the air or placed in a stream of air. The Wet-bulb Temperature is an indication of the total amount of heat in a mixture of dry air and water vapor.

Wet-bulb Depression—The difference, in degrees, between the Dry-bulb and Wet-bulb Temperatures. The greater the Wet-bulb Depression, the lower is the Relative Humidity.

Dewpoint Temperature—This is the temperature at which moisture begins to condense out of an air-water vapor mixture. The Dewpoint Temperature is an indication of (a) Amount of moisture in the mixture (b) Latent Heat of the moisture in the mixture (c) Vapor Pressure of the moisture in the mixture.

Absolute Humidity—The actual amount of moisture, measured in grains of water per cubic foot of the mixture. A grain is a very small measure of weight; there are 7,000 grains in a pound.

Specific Humidity—Very similar to absolute humidity, except that the Specific Humidity is based on the amount of moisture, measured in grains, per pound of dry air in the mixture of air and moisture. Also called Humidity Ratio.

Relative Humidity—Roughly the per cent of moisture actually in 1 cu. ft. of the mixture compared to the moisture that it is possible for the mixture to hold at the Dry-bulb and Wet-bulb Temperatures of the mixture. More accurately, the Relative Humidity is the percentage obtained by dividing the vapor pressure of water at the Dewpoint temperature, by the vapor pressure of water at the Dry-bulb Temperature.

Percentage Humidity—Similar to Relative Humidity except that Percentage Humidity is based on the amount of moisture actually mixed with 1 lb. of dry air at the Dry-bulb and Wet-bulb temperatures, as compared to the amount of moisture that the air could contain if saturated.

Saturation—The condition of the air when it is holding all the moisture that it can contain at its temperature. At Saturation, the Dry-bulb, Wet-bulb, and Dewpoint temperatures are the same, and the Relative and Specific Humidities are 100%.

Humidify—To add moisture to a mixture of dry air and water vapor, or more generally, to any material.

Dehumidify—The reverse of "humidify"—to remove moisture.

Sensible Heat—The heat required to warm 1 lb. of the air 1° on the Dry-bulb thermometer. It varies in amount according to the Dry-bulb Temperature, but is about .24 B.t.u./lb.

Latent Heat—The heat that is in the moisture in the mixture, that has been required to change the water to a water vapor. It is measured in B.t.u. per pound of dry air in the mixture.

Total Heat—The total heat in B.t.u. per pound of dry air in the mixture; therefore the Total Heat is the Sensible Heat plus the Latent Heat. Also called "Senlatent Heat" and "Enthalpy."

Sensible Heat Ratio—The ratio of the Sensible Heat to the Total Heat. In practice is used to indicate the ability of a system to remove moisture from the air as well as cooling the air.

Density—The "weight" of a substance per unit of volume—usually expressed in pounds per cubic foot. In psychrometry, the mixture of air and water vapor is assumed to be at a standard barometric pressure of 29.92 in. of mercury (sea level) unless otherwise stated.

Specific Volume—The volume, in cubic feet occupied by 1 lb. of a substance; so it is just the opposite on "reciprocal" of density, and may be found by dividing 1 by the density.

Standard Air—Air at approximately 70° Dry-bulb, 50% Relative Humidity, .075 lbs. per cu. ft. Density (13.35 cu. ft. per lb. Specific Volume), and at 29.92 in. Barometric Pressure.

Vapor Pressure—The pressure exerted by a vapor that is in contact with the liquid from which it came, that is, at saturation. The Vapor Pressure is the same as the pressure at the boiling and condensing temperature of the liquid. When dealing with mixtures of air and water vapor, the vapor pressures are very low, and are measured in inches of mercury absolute.

Barometric Pressure—The total pressure exerted by atmospheric air under various conditions of humidity, temperature, and altitude. Expressed in inches of mercury absolute.

Partial Pressure—In a mixture of two gases, such as dry air and water vapor, each gas exerts its separate "partial" pressure independently of the other gas. The total pressure equals the sum of the partial pressures of the gases or vapors in the mixture.

Thus the total pressure of atmospheric air is the sum of the partial pressure due to the dry air, and the partial pressure of the vapor pressure of the water vapor in the mixture. This is expressed in Dalton's Law of Partial Pressures, which is the very foundation of the Science of Psychrometry.

(To Be Continued)

New Air Conditioned Office

BIRMINGHAM, Ala.—Construction has started on a larger, more modern, air conditioned home for the Birmingham Builders Exchange, it was announced by Manager J. B. Rawls.

IDEAL
Speed-Freeze
PRODUCTS

BEVERAGE COOLERS AND INSTANTANEOUS DRAFT BEER COOLERS.
(With Refrigerated Faucets)

WRITE
IDEAL COOLER CORPORATION
2933 EASTON AVE. • ST. LOUIS 6, MO.

WORTHINGTON DEALERS ARE SUCCESSFUL DEALERS!

"Worthington put an end to my financing headaches"

"It takes money to make money," says Nat Jewell, Hot Springs, Arkansas' leading air conditioning and refrigeration dealer. Like many another Worthington dealer, he's enthusiastic about the financial backing that's part and parcel of the Worthington franchise. Here's what Mr. Jewell says about it:

"The kind of inventory I need at the start of the selling season would ham-string me financially — except for one good reason — Worthington doesn't tie up my capital when I need it most! When sales get ready to roll, I've got a warehouse full of products . . . and still have money in my pocket for all the advertising and sales help I need to do a good job. As far as I'm concerned, Worthington's got the broadest and most sensible financing program in the business."

Worthington can end your financing worries — 6 ways!

SEASONAL DISCOUNTS
Save up to 5% on carload lots by ordering in advance of the season. Early ordering assures sufficient stock and saves you money.

FIELD WAREHOUSING PLAN
Set up a complete inventory in your own warehouse and pay for it as you use it. Put your capital to work as you see fit.

RETAIL FINANCE PLAN
Retail dealers can discount their retail paper through Worthington (or through their local bank) . . . guaranteeing 48-hour service.

RE-PURCHASE AGREEMENT
The re-purchase agreement is designed to increase your present line of bank credit, enabling you to carry more stock — and sell more.

DEFERRED PAYMENT PLAN
Keep off-season sales high by inviting prospects to buy now . . . pay months later. Small down payment covers your installation costs.

CO-OP ADVERTISING
Reap benefits of Worthington's big-money national advertising program . . . plus generous co-op advertising plans.

Like Nat Jewell, you'll agree that Worthington backs its dealers to the hilt with the "broadest and most sensible financing program" in the industry. It's just one of many reasons why Worthington dealers are successful dealers. You'll find many more in Worthington's new monthly publication, "The Merchandiser." Write for it today. Worthington Corporation, Air Conditioning and Refrigeration Division, Section A.5.49-AC, Harrison, New Jersey. A.5.49

WORTHINGTON

THE BEST FRANCHISE . . . THE MOST COMPLETE LINE

12 Food Plan Operators In N.Y. Agree To End 'Bait' Ad Practices

NEW YORK CITY—Consent injunctions were recently signed by 12 freezer-food plan operators who do an estimated 90% of the food plan business in a four-county area at the western end of Long Island.

The 12 firms agreed to refrain from 22 specific "bait" advertising practices on pain of heavy fines, jail terms, or dissolution of their companies.

Their action winds up a year-long investigation by the New York state attorney general's office into charges that they used advertising practices that tend to mislead and confuse prospective buyers. It was reported that several hundred complaints were received during the investigation.

William Alpert, assistant attorney general who conducted the investigation, praised the operators for their cooperation. He commented that "members of the industry are as anxious to pursue legitimate business practices as this office is to protect the public from misleading advertising."

The plan operators have agreed, among other practices, not to advertise freezer and food combinations in a misleading manner, not to represent that the customer will be able to purchase a freezer and food for what he now pays for food alone, and not to advertise meaningless price guarantees.

The 12 firms are said to serve some 200,000 customers in Brooklyn, Queens, Nassau, and Suffolk counties.

Deepfreeze Promotes Robert D. Schwartz

N. CHICAGO, Ill.—Appointment of Robert D. Schwartz as advertising and sales promotion manager of Deepfreeze Appliance Div., Motor Products Corp., has been announced by John Fellmann, general sales manager.

R. D. Schwartz

Schwartz, who has been with Deepfreeze for the past five years, has served as assistant to the advertising manager for four years.

Seeger Report Shows Refrigeration Sales Up But Net Earnings Down

ST. PAUL—Seeger Refrigerator Co. has reported net earnings of $3,137,873 after income tax provisions in the nine months ended May 31, 1955, compared with $4,498,852 in the corresponding period a year ago.

The earnings were equal to $2.79 a share on 1,125,985 shares of common stock outstanding, as against $4.01 a share on 1,120,800 shares in the nine months of the preceding year.

Sales were $59,100,945 as against $84,163,046.

"The decline in sales is due entirely to defense orders; in fact, our refrigeration sales showed a slight increase during this period," John S. Holl, president, said.

Directors of Seeger declared a cash quarterly dividend of 65 cents a share on the company's common stock, payable Sept. 2, 1955, to stockholders of record at the close of business Aug. 8.

Frigidaire Develops Smokeless, Odorless Oven for Home Use

DAYTON—Development of a "revolutionary" smokeless, odorless oven for household electric ranges was announced recently by M. M. Roberts, General Motors vice president and head of Frigidaire.

The development not only eliminates smoke and odors, but permits the homemaker to broil with the oven door closed.

Roberts did not indicate when the new smokeless ovens will become available.

Extensive tests with the new smoke and odor-dispelling system have been conducted by Frigidaire research engineers. Meats such as bacon and steak can be broiled and even burned, yet smoke and odors are not detected when oven air is discharged into the kitchen.

Roberts stressed the fact that the system does not take up any usable oven space.

The development can be manufactured in both built-in electric wall ovens and ovens in free-standing electric ranges.

Kelvinator Names 3 Executives to Retail Market Div.

DETROIT — Three executive assignments to Kelvinator's growing retail market division have been announced by Homer T. Travis, general sales manager.

FitzGerald

J. H. Mattern

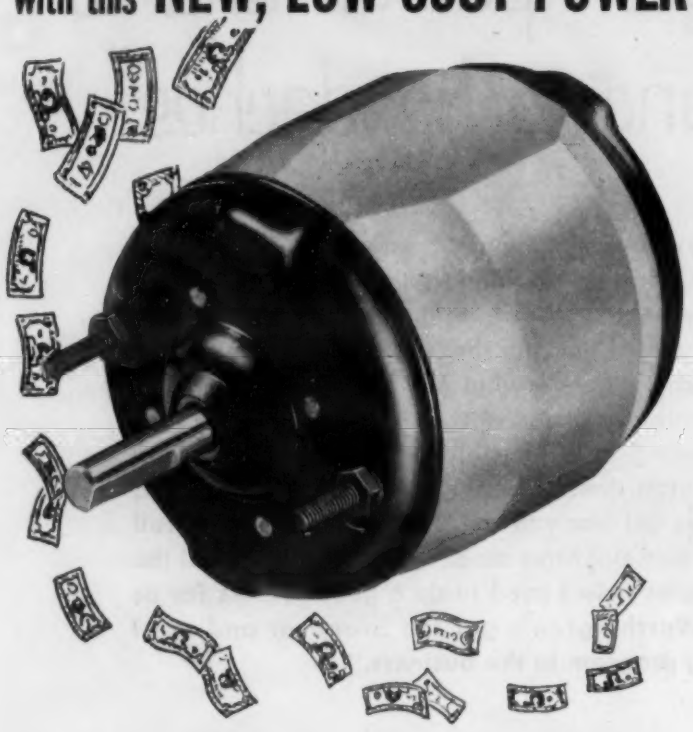
J. F. Rolfes

The appointees are G. G. FitzGerald, manager of dealer development; John F. Rolfes, manager of national accounts; and John H. Mattern, manager of utilities and REA.

Travis said the appointments were made to reinforce Kelvinator's merchandising activities with major retail outlets under J. M. Tenney, manager of the retail market division.

He said Tenney has had overall responsibility for building the organization to handle department and furniture stores, utility and REA and all other major dealer contracts since the first of the year.

Dollars you save
with this NEW, LOW-COST POWER



FOR DOMESTIC APPLIANCES
AND ACCESSORIES ON
AUTOMOBILES • BOATS • AIRCRAFT

Now, power accessory manufacturers can take advantage of the low cost and extreme versatility of this new Redmond MicroMotor. Designed for use on various domestic appliances as well as for automobile window lifts, seat adjustors, windshield wipers, air conditioners, and marine pumps and blowers, this new motor is wound for both direct and alternating current.

The TW motor is available in sizes from 1/100th h.p. at 1500 r.p.m. to ¼ h.p. at 15,000 r.p.m.

Write today for complete specifications

ADVERTISED IN The Saturday Evening POST

The Standard of Dependability

Redmond COMPANY, INC.
OWOSSO, MICHIGAN

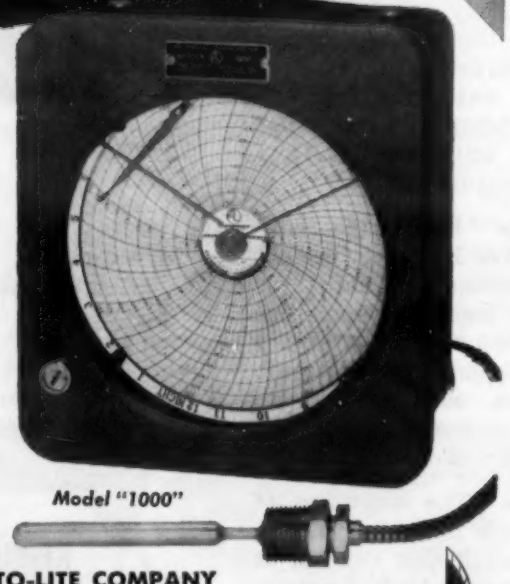
THE BIG NAME IN SMALL MOTORS

AUTO-LITE

TEMPERATURE RECORDING...

Newly designed, Model "1000" Auto-Lite Recorder gives permanent proof of temperature behavior. • 6" clear reading chart; various standard ranges from minus 40°F. to plus 550°F. • 3 standard types; choice of 24-hr. or 7-day cycle. • Electric or mechanical chart drive. • With capillary tubing for remote reading. Priced from $49.50.

Send for new catalog describing many styles of Auto-Lite temperature Recorders and Indicators.



Model "1000"

THE ELECTRIC AUTO-LITE COMPANY
INSTRUMENT AND GAUGE DIVISION
TOLEDO 1, OHIO
NEW YORK • CHICAGO • SARNIA, ONTARIO

TEMPERATURE RECORDERS

"Harry Alter gives you snappy service"

Harry Alter's Newest DEPENDABOOK *No. 163*
Over 10,000 (count 'em!) items, shown and priced:
REFRIGERATION PARTS and Supplies
Also Electric Motors and Parts and Air Conditioning

WHOLESALE ONLY

Write for your copy and save money

The HARRY ALTER CO., Inc.
1728 S. Michigan Ave., Chicago 16, Illinois
134 Lafayette Street, New York 13, N. Y.
122 Parkhouse Street, Dallas 7, Texas

For more information about products advertised on this page use Information Center, page 20.

Universal Consolidation--

(Concluded from Page 1, Col. 2)

air conditioners.

Universal was organized in the fall of 1951 through merger of Artkraft Corp. and the Baltimore Steel Porcelain Co. R. R. Trubey headed the organization as chairman of the board until his death in March 1953. Morton L. Clark was president until he stepped out last February in favor of Clayton.

Soon after Universal's organization, it acquired the major appliance business of Landers, Frary & Clark. Before the acquisition, Artkraft had manufactured appliances for Landers company.

Sale of the firm's lands and buildings to Industrial Buildings, Inc., a local firm, was reported to have brought $300,000.

Admiral Ups Range Price Due to Materials Cost

CHICAGO—Higher steel and material costs are reflected in a $10 increase in the suggested list price of a 30-in. Admiral electric range, it was announced recently by William P. Mackle, sales manager of Admiral Corp.'s range division. The new price on custom model 3EH14 is $269.95. In sea mist green and primrose yellow it is $279.95.

Whirlpool-Seeger--

(Concluded from Page 1, Col. 5)

white goods line," he asserted.

"Further, we received assurances from RCA that it will not use its position to supply Sears with its radio, television, or phonograph products," he continued.

"We found that there are 1,648 distributors handling white goods lines and 2,250 handling either white goods or television products—either of which line could be extended," he added.

The merger still awaits approval of stockholders in all companies involved. No target date has been set for the merger.

Under the merger plan, 5,785,000 shares of common stock would be issued. Of these, 3,080,000 would go to Whirlpool stockholders, 1,548,000 to Seeger shareholders, and 1,157,000 to RCA. All 211,000 shares of non-voting preferred stock would go to Seeger holders.

Refrigerator Shipments Up 21% In St. Louis

ST. LOUIS — Nearly 21% more refrigerators were shipped to dealers in the territory served by the Union Electric Co. here during the first six months of 1955 than in the same period last year, the utility reported recently.

June refrigerator sales were 20% better than in May but down 6.5% from last June, the utility said.

For the six months, distributors shipped to dealers in this territory 110% more dishwashers, 85% more clothes dryers, and 80% more automatic washers. They shipped 28% more ranges, 11% more conventional washers, and 3% more freezers, but 3% fewer ironers.

June shipments of dryers were up 66% over the same month last year.

Unit sales comparisons were as follows:

Appliance	June 1954	June 1955	Six Months 1954	Six Months 1955
Refrigerators	4,678	4,374	19,640	23,746
Freezers	588	399	2,572	2,640
Ranges	753	925	4,561	5,853
Dishwashers	350	380	932	1,963
Dryers	297	492	1,910	3,526
Ironers	21	23	108	105
Automatic Washers	1,271	1,804	5,220	9,408
Conventional Washers	850	686	3,468	3,863

NEW! JARROW Curvall SERIES 1400
REFRIGERATOR AND FREEZER DOOR GASKETS

NOW AVAILABLE!

Curved to fit

"Curvall" curved rubber gaskets make possible a substantial overall saving in your costs by

1. *eliminating the high initial cost of pre-formed frame gaskets.*
2. *eliminating the high cost of shipping pre-formed gaskets.*
3. *requiring much less space for gasket storing.*

"Curvall" is flexible, versatile, shaping itself to any desired bend or curve. Fits perfectly also on the straight sections of the door. No notching is needed on rounded corners. It's another example of the creative engineering Jarrow uses to solve manufacturer's problems.

Let us help you with your gasket problems. Jarrow engineers will work with you —show you how costs can be cut, time saved, new gaskets utilized profitably. Consult with us now.

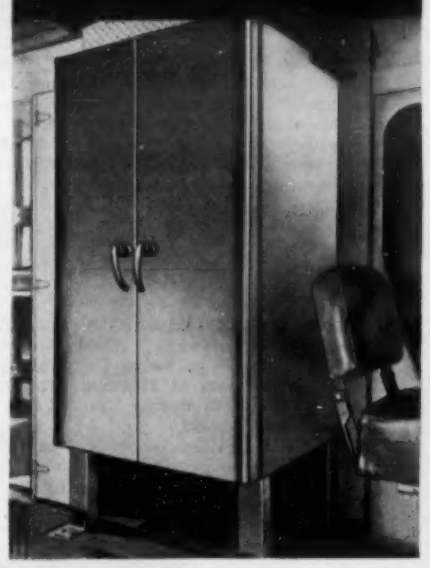
see JARROW for ALL your gasket needs

for example:
- H1370—designed for refrigerator truck bodies.
- Plastic sill wiper gasket for cold storage doors.
- Sponge rubber gaskets.
- Plastic door gaskets in color.

JARROW PRODUCTS INC.
420 NORTH LA SALLE STREET • CHICAGO 10, ILL.

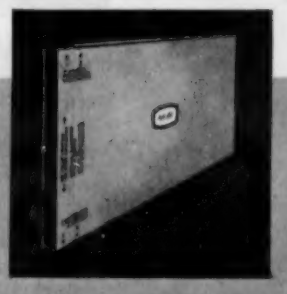
Cold-Cel TRUCK PLATES

BEST FOR LONGER HOLDOVER



Keeps frozen or chilled foods fresh and tasty for delivery

APPLICATION: Frozen pie cabinet, specially designed by Evercold, mounted in truck behind driver for ready accessibility. HOLDOVER: 3 Cold-Cel TRUCK PLATES mounted vertically. Charged at night by ¼ h.p. condensing unit. Cold-Cel TRUCK PLATES are adaptable to any similar installation. May also be employed in mobile or portable food dispensing units.



Get all the facts on Cold-Cel TRUCK PLATES. Write for "Cold-Cels in Action"—a pictorial brochure—or Engineering Catalog CE.

DOLE REFRIGERATING COMPANY
5920 NORTH PULASKI ROAD
CHICAGO 30, ILLINOIS
103 PARK AVENUE, NEW YORK 17, N.Y.
In Canada:
Dole Refrigerating Products Limited
44 Elgin Street, Brantford, Ontario

Maximum Refrigeration Efficiency
DOLE
MANUFACTURERS OF
THE Cel LINE

50% more frozen-food storage in the same floor space!

Warren 45-CU.-FT. STORAGE FREEZER

PACKED WITH PROFITS!

This big upright freezer means more economy ... more profits on frozen foods. Its 45 cubic feet of storage is 100% usable; eliminates most needs for expensive walk-ins. It uses only 12.9 square feet of floor space, and a top-mounted compressor can be used in most instances to conserve further valuable space. Whether your market is small or super, this freezer makes more money for you!

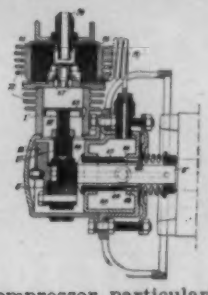
- **INCREASED STORAGE** means more economy . . . better buying and quantity discounts . . . hence more profits.
- **100% ACCESSIBLE** and 100% usable storage space packs more profits into every inch of valuable area.
- **HEAVILY COILED** for dry, brick-hard freezing. Copper coils are wrapped on the top, bottom, and back wall sections, plus two plate coils, which serve as permanent upper-area shelves.
- **MULTI-CASE CONSTRUCTION** gives you as many units as your business requires, perfectly fitted side by side with only one pair of ends.
- **IDEAL SIZE** permits use in fruit stands, filling stations, etc., for profitable after-hours merchandising of bagged ice. Holds 100 12½-pound bags.

• WRITE FOR LITERATURE NOW

WARREN REFRIGERATORS
P.O. Box 1436, Atlanta 1, Georgia
Export Division: 345 S. Spring St., Los Angeles 13, Cal.

Week of June 7 (Concluded)

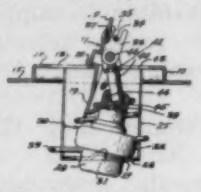
2,710,137. COMPRESSOR. Maurice Arnouil Cosnac, near Brive, France, assignor to Societe Anonyme dite: S. E. P. A. Societe d'Exploitation des Procedes Arnouil, Cosnac, near Brive, France, a corporation of the French Republic. Application Dec. 1, 1950, Serial No. 198,565. Claims priority, application France Dec. 8, 1949. 3 Claims. (Cl. 230—172.)



1. A compressor particularly for use in refrigerating machines which comprises, a casing arranged at the end of the shaft of a prime mover, a shaft mounted in the compressor casing, a compression cylinder within the casing arranged perpendicularly with respect to the compressor shaft, an eccentric keyed on the compressor shaft, a pitman actuated by said eccentric, and a piston rigid with said pitman slidably received in said cylinder, said piston consisting of a spherical segment belonging to a sphere equal in diameter to the bore of the cylinder, said spherical segment being defined by two parallel planes which are equidistant from a diametrical plane of said sphere perpendicular to the axis of the pitman and are sufficiently remote from said diametrical plane so that even in the most tilted positions of the pitman relatively to the axis of the cylinder, the piston is in contact with the cylinder along a complete equatorial circumference.

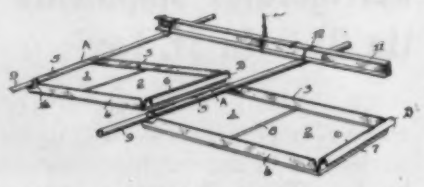
2,710,146. THERMOSTATIC VALVE. Harold B. Drapeau, Oak Park, Ill., assignor to The Dole Valve Co., Chicago, Ill., a corporation of Illinois. Application Oct. 14, 1953, Serial No. 386,019. 6 Claims. (Cl. 236—34.)

1. In a thermostatic valve particularly adapted for cooling systems for automotive vehicles, an annular valve casing having a port opening, a butterfly valve element pivotally supported on said casing to open and close said port opening, said casing having a seating portion spaced from said port opening, an extensible temperature-responsive element rockingly supported in said seating portion and including a casing for a thermal-responsive medium, a cylinder extending



from said casing, a piston extensible from said cylinder and having pivotal connection with said valve, for pivoting the same into an open position, a spring seated on said seating portion and connected with said valve at a point offset from the center thereof, and returning said piston within said cylinder upon normal operation of said valve, and said cylinder having a bore recessed inwardly of the outer end thereof, to accommodate tilting movement of said piston with respect to said cylinder by the force exerted thereon by said spring upon excessive extension of said piston upon excessive temperature conditions, and preventing ejection of said piston from said cylinder and positively locking said valve in an open position.

2,710,175. HEAT EXCHANGE PANEL STRUCTURE. Albert T. Jorn, Grayslake, Ill., assignor to Burgess-Manning Co., Libertyville, Ill., a corporation of Illinois. Application Feb. 18, 1952, Serial No. 272,135. 9 Claims. (Cl. 257—124.)



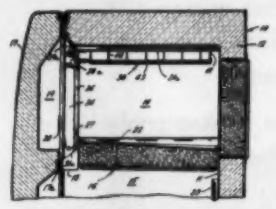
1. In a panel ceiling for a heat transfer system including a plurality of spaced parallel fluid-conducting pipes arranged in a horizontal plane and rectangular panels forming a ceiling surface under said pipes, that improvement therein in which each panel has a first flange rising from one side thereof and having an inwardly facing arcuate portion which hooks over and engages a pipe in laterally demountable relation thereto and a second flange rising from the side of said panel opposite said first flange and having an outwardly facing arcuate portion, both of said flanges terminating at the extremities of said arcuate portions, the arcuate portion of said second flange being curved over an arc of slightly more than 180 degrees and lapping and resiliently clamping the arcuate portion of the first flange of an adjoining panel in laterally demountable relation thereto.

Week of June 14

2,710,507. METHOD AND APPARATUS FOR DEFROSTING THE EVAPORATOR OF A REFRIGERATION SYSTEM. Carlyle M. Ashley, Fayetteville, N. Y., assignor to Carrier Corp., Syracuse, N. Y., a corporation of Delaware. Application September 30, 1952, Serial No. 312,333. 15 Claims. (Cl. 62—4).

1. In the method of defrosting the evaporator of a refrigeration system, the steps which consist in superheating gaseous refrigerant, supplying superheated refrigerant to the evaporator, placing the superheated refrigerant in heat exchange relation with frost collected on the exterior surfaces of the evaporator to thaw the frost thereby removing at least a portion of the superheat from the gaseous refrigerant without substantial condensation of the gaseous refrigerant, and returning gaseous refrigerant only from the evaporator directly to the compressor.

2,710,508. AIR FLOW IN REFRIGERATED COMPARTMENT. Lloyd A. Staebler, Oreland, and Herbert Phillips, Roslyn, Pa., assignors to Philco Corp., Philadelphia, Pa., a corporation of Pennsylvania. Application February 3, 1953, Serial No. 334,786. 10 Claims. (Cl. 62—89)



1. In refrigeration apparatus, a cabinet having therein a storage compartment provided with an access opening, a main door extending across the access opening and closing said compartment, a freezing chamber within said cabinet, said chamber including an evaporator and having an opening confronting said main door and spaced therefrom, a door disposed between said main door and said chamber and extending across the chamber opening to close the same, the chamber door being so constructed and so arranged with respect to said chamber as to provide a limited air inlet opening adjacent a wall portion of the evaporator, said chamber being provided with an outlet opening for said air, whereby moisture-laden air present in the space between said main door and said chamber door flows into said chamber through said inlet opening and out of said chamber through said outlet opening, and means disposed adjacent said wall portion of the evaporator and extending from said door in the region of said inlet opening, for a considerable distance inwardly of said chamber, said means providing a passage through which the inletted air flows in high heat exchange relation with said evaporator wall portion prior to passage through said chamber and thence through said outlet opening.

(To Be Continued)

Servicing Automobile Air Conditioners

BY C. DALE MERICLE

Fifth make of automobile air conditioner to be included in this series is that produced by Novi Equipment Co., description of which begins with this instalment.

In previous instalments systems of the following were discussed: A.R.A. (June 13, 20, and 27), Frigikar (July 4 and 11), Automotive Air Conditioning (July 18 and 25), and Pivot (Aug. 1 and 8).

Several other makes will be taken up in future issues.

FIG. 1—Compressor and condenser arrangement of Novi air conditioner are indicated here. Third line leaving condenser is part of by-pass hookup.

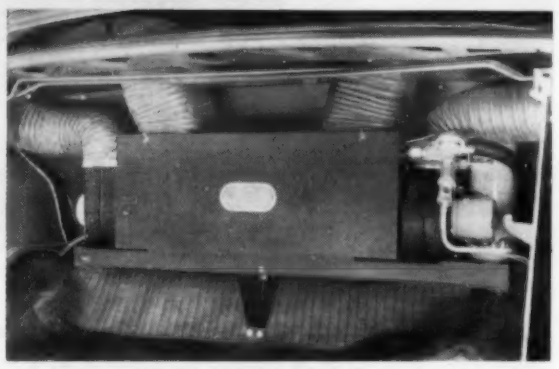


FIG. 2—Evaporator-blower assembly of Novi unit goes in trunk of car.

NOVI - 1

Novi Equipment Co.
Novi, Mich.

DESCRIPTION

Novi air conditioners are currently being manufactured for the 1954 and 1955 Ford (both "6" and "V-8"), Mercury, Lincoln, Oldsmobile, Buick, Cadillac, and the 1955 Chevrolet. These units are also original equipment (factory installed) on the 1955 Studebaker.

Major components of the Novi system are arranged conventionally with the compressor being mounted on the car engine, the condenser in front of the radiator, and the evaporator-

(Continued on next page)

PRESSTITE
#165 Cork Insulation Tape

Anti-Sweat Pipe Wrapping

Stops Drip!

See your wholesaler or WRITE

PRESSTITE ENGINEERING CO.
3774 CHOUTEAU AVE. • ST. LOUIS 10, MO.

MARSH
Instruments

THE SERVICEMAN LINE of Testing Gauges, Testing Thermometers, Timers, etc.
PRESSURE GAUGES and Dial Thermometers for all services.
MARSH-ELECTRIMATIC, Water Regulating Valves, Solenoid Valves.
MARSH INSTRUMENT COMPANY
Sales Affiliate of Jas. P. Marsh Corporation
Dept. D., Skokie, Ill.

SHAFTS by MODERN

SINCE 1924...

Shafts by Modern now power compressors for the leading lines of commercial refrigeration and air conditioning units. For precision SHAFTS, in quantity, consult us. Send blueprints for quotation.

Modern Machine Works, Inc.
Pioneers in Shaft Manufacture
5354 S. KIRKWOOD AVENUE CUDAHY, WISCONSIN

CLASSIFIED ADVERTISING

RATES for "Positions Wanted" $7.50 per insertion. Limit 50 words, 15¢ per word over 50.

RATES for all other classifications $10.00 per insertion. Limit 50 words. 20¢ per word over 50.

ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other addresses by actual word count. Please send payment with order.

POSITIONS AVAILABLE

AIR CONDITIONING and refrigeration serviceman. Permanent position, salary to $3.00 per hour, time and one-half for overtime, group insurance. Must be experienced in central station systems: controls, refrigeration and air handling equipment. Can advance to service manager. Contact Mr. Holsclaw or Mr. Conner, CONDITIONED AIR, INC., Charleston, West Virginia.

EXCELLENT OPPORTUNITY for a first-class commercial refrigeration and air conditioning serviceman. Must have at least 5 full years of commercial experience. Top wages and benefits and full-year employment. SQUARE DEAL REFRIGERATION, INC., 10163 Gratiot Ave., Detroit 13, Mich. Phone: WAlnut 1-2345.

EXCELLENT OPPORTUNITY—Large established concern wants sales representative with successful background in air conditioning or central heating to cover Kansas. Salary, expenses and bonus. Give full resume of background, experience and salary requirements. BOX A5307, Air Conditioning & Refrigeration News.

LEADING MANUFACTURER of florist refrigerators has opening for dealers in the following territories: Pennsylvania, New England, Carolinas, Indiana and West Coast. Profit-making opportunity. Write BOX A5309, Air Conditioning & Refrigeration News.

EQUIPMENT WANTED

WILL TRADE York top sections Models 450 and 450A in good working order for any of the following equipment: Ajax A5A-4 or A5A-2, Frigidaire cuber, York DER-2B flakers. Please advise serial numbers and particulars to Stephen Diczok, c/o AUTOMATIC COOLING & HEATING COMPANY, 6734 Central Avenue, St. Petersburg, Florida.

WANTED: ANY amount Frigidaire relays, YG2 type. Will pay 25¢ each. Ship in and will mail check. UNITED CONTROLS, 342 West 70th Street, New York 23, N. Y.

EQUIPMENT FOR SALE

REFRIGERATION VALUES: Attention servicemen; send for our catalog of refrigeration parts; savings up to 50%. WALTER W. STARR REFRIGERATION SUPPLIES, 2833 Lincoln Ave., Chicago 13, Illinois.

NEW 1955 central air conditioners at close-out prices to responsible distributors. 2, 3, and 5-ton. Quality-built. Water-cooled. Copeland compressors. Nationally advertised. Immediate shipment by old, reliable manufacturer. Only 30 units. Act fast! BOX A5308, Air Conditioning & Refrigeration News.

BUSINESS OPPORTUNITIES

WELL-ESTABLISHED AIR conditioning and commercial refrigeration firm. Franchised lines. Location N.Y.C. Operating seven service trucks. Large quarters with complete shop facilities. Ideal location. Owners have other interests, will sell for less than actual value, turn over complete business. Good opportunity for industrious party. Write BOX A5298, Air Conditioning & Refrigeration News.

FOR SALE: Commercial refrigeration and air conditioning business located in central Missouri, well established, two major franchises. Write BOX A5305, Air Conditioning & Refrigeration News.

For more information about products advertised on this page use Information Center, page 20.

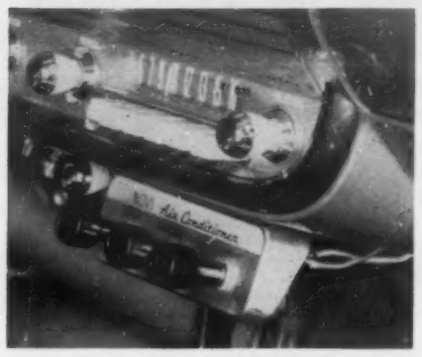


FIG. 3—Control panel attached to dash includes two blower controls and push-pull lever controlling temperature through manual over-ride of pressure regulated modulating by-pass valve.

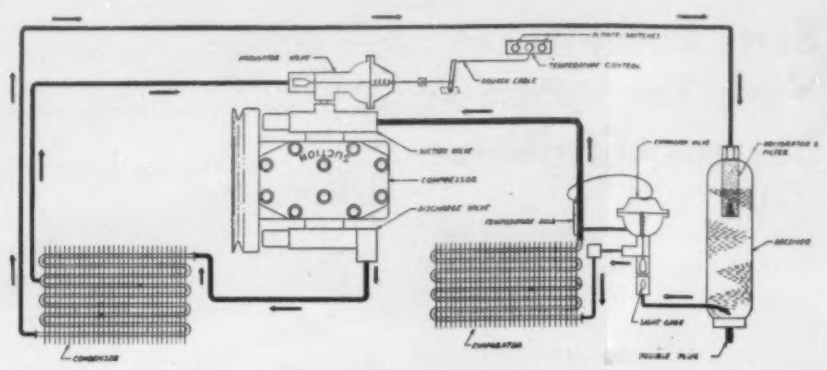


FIG. 4—Schematic shows refrigerant circuit of Novi automobile air conditioner, including controls.

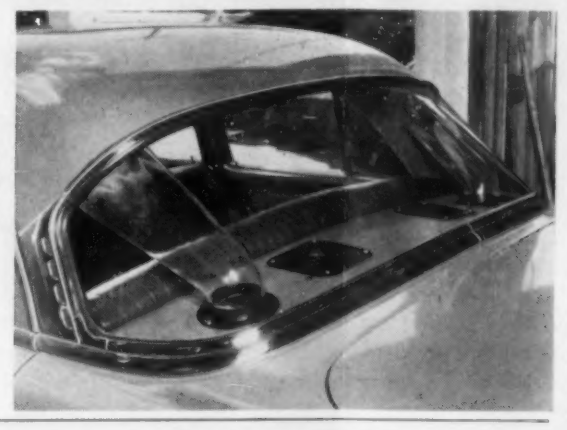


FIG. 5—Plastic discharge outlets are used by Novi to direct flow of air forward along roof of car.

Auto Conditioners - -

(Continued from preceding page)

blower assembly in the trunk of the car.

Refrigerant used is "Freon-12." Charge is 4 lbs. of liquid refrigerant.

Compressor

Compressor employed on Novi systems is the Tecumseh 2-cylinder model HH compressor.

Suction service valve of this compressor is located on the left side, as viewed from the flywheel end, and the discharge service valve is on the right side of the compressor.

Condenser

Condenser of the Novi air conditioner is installed in front of the car radiator. Inlet and outlet connections are usually on the left (curb) side though not always. (See Fig. 1.)

Also on the same side is the connection for the modulating by-pass arrangement. The by-pass is taken off the condenser a few passes down from the top.

Evaporator

Evaporator-blower assembly mounts in the forward section of the trunk. (See Fig. 2.)

This assembly consists of the evaporator coil (4½ by 8½ by 18 in. with 12 fins per inch), two blowers, thermostatic expansion valve (Detroit 777), sight glass, and combination receiver-drier.

A flexible discharge duct extends from each blower (located at opposite ends of the evaporator assembly) to outlets on opposite sides of the parcel shelf directly overhead.

Similarly, two flexible return air ducts run from intake grilles on the parcel shelf to the evaporator assembly.

Refrigerant flow is from the condenser to the receiver-drier, thence to sight glass installed at inlet of expansion valve, through evaporator, and thence to compressor and condenser.

Controls

Controls of the Novi air conditioner consist of individual speed control switches for each of the two blowers and a temperature control. These are mounted in a control panel attached to the dashboard. (See Fig. 3.)

Blower controls are of the push-pull type and have three positions—off, low, and high speed. Control for left-hand blower is on the left side of control panel. Switch on right of panel controls operation of right-hand blower.

In center of panel is the temperature control knob. This is connected by a flexible cable to the pressure-regulated modulating by-pass valve (Detroit 669) installed on the suction valve of the compressor. (See Fig. 4.)

A by-pass line runs from the condenser to the by-pass valve, the line being taken off the condenser a few passes from the top.

Purpose of the by-pass arrangement is to by-pass some or all of the refrigerant around the evaporator. When the temperature control is pushed in all the way, all of the refrigerant is by-passed around the evaporator and the air conditioner is, in effect, turned off.

When the temperature control is pulled out fully, the by-pass valve is closed and all the refrigerant flows to the evaporator. Setting the control lever at intermediate positions lets the user control the amount of cooling obtained.

Temperature control is actually an over-ride arrangement, the action of the by-pass modulating valve being normally controlled by the suction pressure.

The following are approximate operating pressures of the Novi unit. These are based on constant car speed with the blowers turned on:

Outside Air Temp.	Car Speed (M.p.h.)	High Pres. (P.s.i.g.)	Low Pres. (P.s.i.g.)
80°	20	140	40
80°	40	160	30
80°	60	180	20
100°	20	160	45
100°	40	180	40
100°	60	200	30

Wiring

Wiring of the Novi air conditioner is quite simple. Two leads run from the car ignition to the control panel, one lead being connected to each blower switch.

Two leads extend from each blower switch to the corresponding blower motors on the evaporator assembly in the trunk. The two leads, connected to the proper terminals of the motors, provide the two-speed control of the blowers. One terminal of each motor is grounded.

Other Components

Flexible hose is used throughout the Novi system as refrigerant tubing for the connections between compressor, condenser, and evaporator. Because hose is used care must be taken to prevent the hose touching or getting close to high temperature parts of the car, especially the exhaust pipe and muffler.

Plastic discharge tubes are installed on the air outlets on the parcel shelf to direct flow of air forward along roof of the car. (See Fig. 5.)

(To Be Continued)

Government Contracts

ARMY

Armed Services Medical Procurement Agency, 84 Sands St., Brooklyn, N. Y.
REFRIGERATED X-RAY FILM PROCESSING MASTER TANK.—IFB 56-90B. —Bid Opening 17 Aug. 55.—48 ea.

NAVY

Commandant of the Marine Corps, Washington, D. C., Code C/CSG/.
REFRIGERATORS, Mechanical, Electric, Type I, size 10, Fed. Spec. AA-R-211C and Amendment.—68 ea.—35 B.—Bid Opening 16 Aug. 55.

GENERAL SERVICES ADMINISTRATION

General Services Administration, Region 2, Business Service Center, 250 Hudson St., New York 13, N. Y.
FANS, Air Circ. 30".—25 ea.—IFB NY-3T-64386.—Bid Opening 8-16-55.
General Services Administration, Business Service Center, 1114 Commerce, Dallas, Texas.
WIRING AND INSTALLING AIR CONDITIONING UNITS at Post Office and Court House, San Antonio, Texas.—Job.—IFB CR 7561-78.—Bid Opening 16 Aug. 55.
General Services Administration, Business Service Center Region, 7th and D Sts., S.W., Washington 25, D. C.
AR CONDITIONING UNITS, 5 Hp.—1 ea.—TOWER CONDENSING WATER.—1 ea.

U. S. DEPARTMENT OF COMMERCE

Chief, Supply Division, Technical Development and Evaluation Center, Civil Aeronautics Administration, P. O. Box 5767, Indianapolis, Ind.
Furnish and Install WINDOW TYPE AIR CONDITIONING UNITS in accordance with Spec. No. TD-156.—Various Quantities.—IFB-3.—Bid Opening 8-17-55.

CONTRACTS AWARDED THROUGH AUGUST 8, 1955

General Services Administration Region 6, Business Service Center, 2306 East Bannister Rd., Kansas City 14, Mo.
Air Conditioning Court Room, Etc. U. S. Post Office, Lincoln, Neb.—CR 1405.—Job.—$18,000.—Bonebright Htg. & Air Conditioning, 1123 R St., Lincoln, Neb.

Commanding Officer, Ships Parts Control Center, Mechanicsburg, Pa.
Repair Parts for Compressor.—Various.—No Specs. or dwgs. available—Contract N104s-52492 (Neg. 76-52492).—4,885 ea.—$32,643.—Worthington Corp., 401 Worthington Ave., Harrison, N. J.

Business Service Center, General Services Administration, Region 3, 7th and D Sts., S.W., Washington 25, D. C.
Air Conditioning unit. (IFB 4H-64733)—150 ea.—$18,318.—Frigidaire Sales, 2315 Cecil Ave., Baltimore 18, Md.

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Sell one for every room cooler in your territory. This cover gives secure protection in the worst weather—made of heavy-duty water-repellent canvas, with extra strong web straps. Fits all models, all mountings, all floor levels. Quickly and easily installed.

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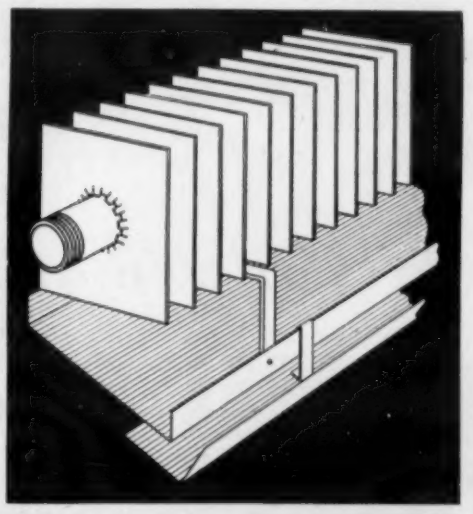

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Down Payment Needed Before Fla. Banks Can Take Instalment Paper

TALLAHASSEE, Fla. — New regulations that prohibit state banks from purchasing instalment contracts from dealers unless there has been a substantial down payment were announced recently by State Comptroller Ray E. Green.

The regulations also require banks to have evidence that the buyer has the ability to pay for the items for which he has contracted. The bank must also collect the instalment payments. Dealers can collect the instalments only if they furnish the bank holding the papers with a performance bond.

"I believe," Green said, "it is a dangerous trend to permit the purchase of expensive items like automobiles and television sets with no or merely token down payments and without a thorough check of the purchaser's ability to pay."

He suggested no less than one fourth the total purchase price as minimum down payment.

Mitchell Leaves Remington

AUBURN, N. Y.—Frank A. Mitchell has resigned the position of general sales manager of Remington Corp.

Mitchell was formerly general products manager of Servel, Inc., and air conditioning sales manager of Fedders-Quigan Corp.

Weber Report Shows 6 Months Income Up

LOS ANGELES—Net income of Weber Showcase & Fixture Co., Inc. in the first six months of 1955 was up sharply from the like year-ago period.

The company reported that net income in this year's first half amounted to $567,304 (including non-recurring profit of $60,000 from sale of real estate), equal, after preferred dividends, to $1.28 a share. This compares with $211,681, or 46 cents a share, in the corresponding 1954 period.

Gross sales totaled $12,389,933, against $10,693,562 last year.

Karl Weber, president, said prospects appear good for a continuation of a high volume of business.

Conditioned Market Opened

DALLAS — Wyatt Food Stores, chain organization, has opened a huge air conditioned supermarket in the Preston Royal Shopping Center. It covers 18,000 sq. ft.

The market has 85 ft. of refrigerated self-service cases and 58 ft. of refrigerated delicatessen and dairy cases.

MECHANICAL ENGINEERS

Up to 5 years' experience in air conditioning product development, self-contained air conditioners, chillers, etc. Large manufacturer located in western Pennsylvania. In replying, give full information as to experience, education, etc.

BOX A5310

Air Conditioning & Refrigeration News

Detroit Works On Water-Saving Rules For Air Conditioners

DETROIT — In response to councilmanic concern over water conservation, sparked by the recent heat wave, the city water commission has announced that it is working with the Department of Buildings & Safety Engineering on an ordinance to require water conserving devices on air conditioners.

Water Commissioner Laurence G. Lenhardt estimated that "soon" 750,000 people here would be using air conditioning systems.

"We've got to do something about it before air conditioning units in the city use up half the water supply on the critically hot days in the summer," he declared.

Seitz Resigns York Sales Post To Become Distributor

YORK, Pa.—D. C. Seitz, manager of sales, Commercial Div., York Corp., has resigned that position effective Sept. 1 to enter the distributing business in Texas.

D. C. Seitz

Seitz joined York 17 years ago and was active in helping the company develop its line of commercial products and a distributor-dealer organization. He held the positon of manager of distributor sales until 1954 when, as a result of the organization divisionalization program he was named to the post from which he is currently leaving.

He is well known throughout the industry as an inventor, engineer, and sales executive, having been active in the refrigeration field ever since his graduation from the University of Michigan.

According to a letter of announcement from York Corp., no successor has been appointed, as of this time.

Ohio Owner To Meet Jury On 'Death Trap' Law

COLUMBUS, Ohio—Pleading not guilty to violation of the city's "death trap" law, the owner of a refrigerator in which two five-year-old boys lost their lives will be given a jury trial in Municipal Court here on Oct. 19.

The boys were found dead on July 11 in a refrigerator Emanuel Valentine left outside his house when he moved away.

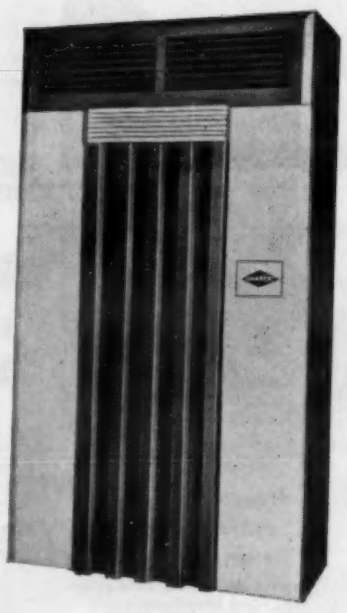
Straus-Frank Named Texas Distributor For Worthington

HOUSTON, Texas — The Straus-Frank Co. here has been appointed distributor for Worthington Corp.'s line of air conditioning and refrigeration products, according to M. M. Lawler, vice president in charge of Worthington's Air Conditioning & Refrigeration Div.

One of the largest distributing organizations in Texas, the company was first established in 1870 and has been actively engaged in the field of air conditioning during the past 23 years.

It has installed a total of 125,000 tons of air conditioning in more than 3,000 commercial and industrial buildings in the Texas area.

Can you afford to be without



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